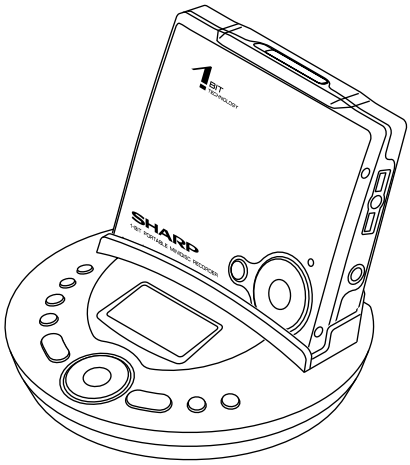
SHARP SERVICE MANUAL

No. SY380IMDR580H



1-BIT PORTABLE MINIDISC RECORDER

MODEL IM-DR580H(S) IM-DR580H(BK)

• In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.

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SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

SAFETY PRECAUTION FOR SERVICE MANUAL

Precaution to be taken when replacing and servicing the Laser Pickup.

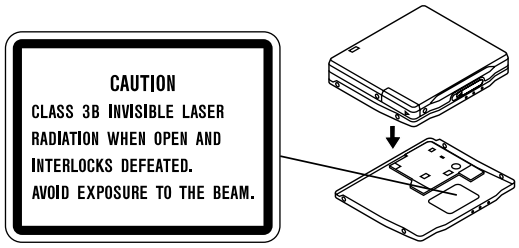
The AEL (Accessible Emission Level) of Laser Power Output for this model is specified to be lower than Class 1 Requirements. However, the following precautions must be observed during servicing to protect your eyes against exposure to the laser beam.

(1) When the cabinet has been removed, the power is turned on without a compact disc, and the Pickup is on a position outer than the lead-in position, the Laser will light for several seconds to detect a disc. Do not look into the Pickup Lens.
(2) The Laser Power Output of the Pickup inside the unit and replacement service parts have already been adjusted prior to shipping.
(3) No adjustment to the Laser Power should be attempted when replacing or servicing the Pickup.
(4) Under no circumstances look directly into the Pickup Lens at any time.
(5) CAUTION - Use of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

For U.K.

Laser Diode Properties
- Material: GaAlAs
- Wavelength: 785 nm
- Pulse time:

Read mode: 0.8 mW Continuous
Write mode: max 12 mW 0.5S
min cycle 1.5S
Repetition



Except for U.K.

Laser Diode Properties
- Material: GaAlAs
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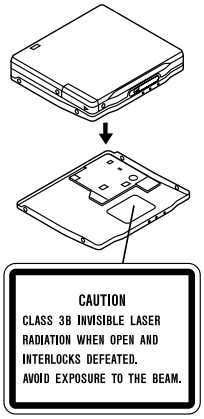


WARNUNG - UNSICHTBARE LASERSTRAHLUNG DER KLASSE 3B WENN GERÄT GEÖFFNET. UND VERRIEGELUNGEN AUFGEHOBEN. VERMEIDEN SIE, SICH DER STRAHLUNG AUSZUSETZEN.

ATTENTION - RAYON LASER DE CLASSE 3B INVISIBLE EN CAS D'OUVERTURE ET DE VERROUILLAGE DÉFECTUEUX. ÉVTTER UNE EXPOSITION AU FAISCEAU.

VARO - AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LUOKAN 3B NÄKYMÄTÖNTÄ LASERSÄTEILYLLE VARO ALTISTUMISTA SÄTEELLE.

VARNING - KLASS 3B OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD UNDVIK EXPONERING FÖR STRÅLEN.

ADVARSEL - KLASS 3B USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLNING.

Precaution to be taken when replacing and servicing the laser pickup.
The following precautions must be observed during servicing to protect your eyes against exposure to the laser.

Warning of possible eye damage when repairing:
If the AC adaptor or batteries are connected when the top housing (disc cover) of the unit is removed, and the PLAY key is pressed, the laser will light up during focus access (2-3 seconds). (Fig. 2-1) During the operation, the laser will leak from the opening between the magnetic head and the mechanical chassis (Fig. 2-2). In order to protect your eyes, you must not look at the laser during repair. Before repairing be sure to disconnect the AC adaptor and remove the batteries.

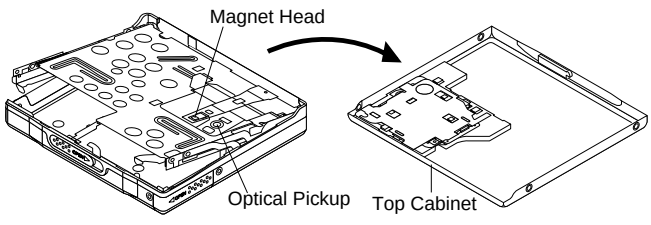


Figure 2-1

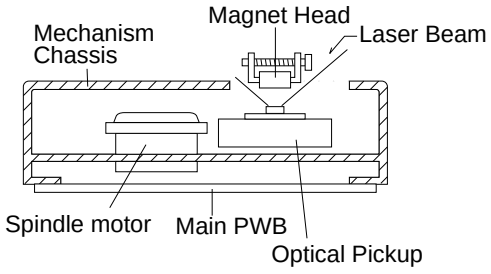


Figure 2-2

PRECAUTIONS FOR USING LEAD-FREE SOLDER

1. Employing lead-free solder

"All PWBs" of this model employs lead-free solder. The LF symbol indicates lead-free solder, and is attached on the PWBs and service manuals. The alphabetical character following LF shows the type of lead-free solder.

Example:

Sn-Ag-Cu Indicates lead-free solder of tin, silver and copper.

2. Using lead-free wire solder

When fixing the PWB soldered with the lead-free solder, apply lead-free wire solder. Repairing with conventional lead wire solder may cause damage or accident due to cracks.

As the melting point of lead-free solder (Sn-Ag-Cu) is higher than the lead wire solder by 40 °C, we recommend you to use a dedicated soldering bit, if you are not familiar with how to obtain lead-free wire solder or soldering bit, contact our service station or service branch in your area.

3. Soldering

As the melting point of lead-free solder (Sn-Ag-Cu) is about 220 °C which is higher than the conventional lead solder by 40 °C, and as it has poor solder wettability, you may be apt to keep the soldering bit in contact with the PWB for extended period of time. However, Since the land may be peeled off or the maximum heat-resistance temperature of parts may be exceeded, remove the bit from the PWB as soon as you confirm the steady soldering condition.

Lead-free solder contains more tin, and the end of the soldering bit may be easily corrected. Make sure to turn on and off the power of the bit as required.

If a different type of solder stays on the tip of the soldering bit, it is alloyed with lead-free solder. Clean the bit after every use of it.

When the tip of the soldering bit is blackened during use, file it with steel wool or fine sandpaper.

Be careful when replacing parts with polarity indication on the PWB silk.

Lead-free wire solder for servicing

Ref No.	Parts No.	Description
PWB-A	92LPWB5593MDSS	Main
PWB-B1	92LPWB5484CHRS	Multi-Link Station A

FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

SPECIFICATIONS

Power source: DC 1.2 V: Rechargeable Nickel-Metal Hydride Battery (AD-N55BT) x 1
DC 1.5 V: Commercially available, "AA" size (LR6), alkaline battery x 1
DC 3 V: AC adaptor (AC 110 - 240 V, 50/60 Hz), with the multi-link station
Power consumption: 60 mA (AC adaptor)
Output power: RMS: 16 mW (8 mW + 8 mW)
Charging time: Approx. 3.5 hours (90 %)
Approx. 5.5 hours (fully charged)(When using the AC adaptor included with the unit)
Dimensions: Width: 80.1 mm
Height: 16.6 mm
Depth: 72.6 mm
Weight: 120 g with rechargeable battery/95 g without rechargeable battery
USB socket: Multi-link station; exclusive USB socket
Input socket: Main unit; Microphone (powered by the main unit)
Multi-link station; Line/optical digital
Output socket: Main unit; Earphones (impedance: 32 ohms)/remote control
Multi-link station; audio output, speaker output
Type: Portable MiniDisc recorder
Signal readout: Non-contact, 3-beam semiconductor laser pickup
Audio channels: Stereo 2 channels/monaural 1 channel
Frequency response: 20 - 20,000 Hz (±3 dB)
Rotation speed: Approx. 400 - 1,800 rpm CLV (Playback), approx. 400 - 2,700 rpm CLV (Recording)
Error correction: ACIRC (Advanced Cross Interleave Reed-Solomon Code)
Coding: ATRAC/ATRAC3 (Adaptive TRansform Acoustic Coding), 24-bit computed type
Recording method: Magnetic modulation overwrite method
Sampling frequency: 44.1 kHz (32 kHz and 48 kHz signals are converted to 44.1 kHz, and then recorded.)
Wow and flutter: Unmeasurable (less than ±0.001 % W. peak)

Battery life:

	Stereo		2 times long		4 times long	
When using the rechargeable battery (fully charged) included with the unit	Continuous recording: Approx. 8 hours	Continuous play: Approx. 27 hours	Continuous recording: Approx. 12 hours	Continuous play: Approx. 36 hours	Continuous recording: Approx. 15 hours	Continuous play: Approx. 42 hours
When using a commercially available, high capacity, "AA" size (LR6), alkaline battery	Continuous recording: Approx. 8 hours	Continuous play: Approx. 48 hours	Continuous recording: Approx. 15 hours	Continuous play: Approx. 67 hours	Continuous recording: Approx. 20.5 hours	Continuous play: Approx. 75 hours
When using one, commercially available, high capacity, "AA" size (LR6), alkaline battery with the rechargeable battery (fully charged)	Continuous recording: Approx. 20 hours	Continuous play: Approx. 80 hours	Continuous recording: Approx. 30.5 hours	Continuous play: Approx. 103 hours	Continuous recording: Approx. 40 hours	Continuous play: Approx. 122 hours

- The above values are the standard values when the unit is used at an ambient temperature of 25°C.
- The continuous recording time is for microphone input when the volume level is set to "VOL 0" and the backlight is set to "LIGHT OFF".
- The continuous play time shows the value when the volume level is set to "VOL 15" and the backlight is set to "LIGHT OFF".
- The operating time when using an alkaline battery may be different, depending on the type and manufacturer of the battery, and on the operating temperature.
- "Fully charged" means that the battery is charged for approx. 3.5 hours, and charged for another 2 hours after the battery indicator disappears.

Input sensitivity:

	Reference input level	Input impedance
MIC H	0.25 mV	10 k ohms
MIC L	2.5 mV	10 k ohms
LINE	100 mV	20 k ohms

Output level:

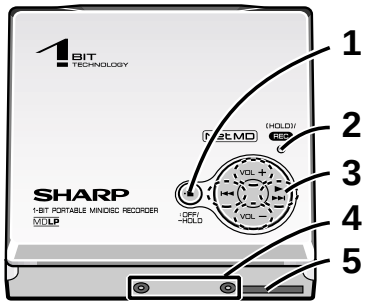
	Specified output	Maximum output level	Load impedance
Earphones	-	8 mW + 8 mW	32 ohms
Audio output	125 mV (-12 dB)	-	10 k ohms
Speaker output	125 mV (-12 dB) *1	-	10 k ohms

*1 When the speaker output selector switch of the multi-link station is set to MD.

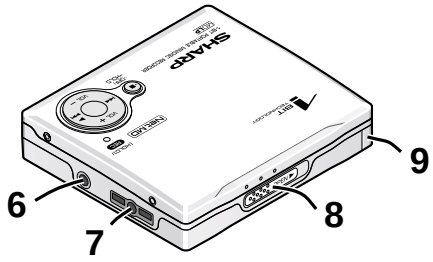
Specifications for this model are subject to change without prior notice

NAMES OF PARTS

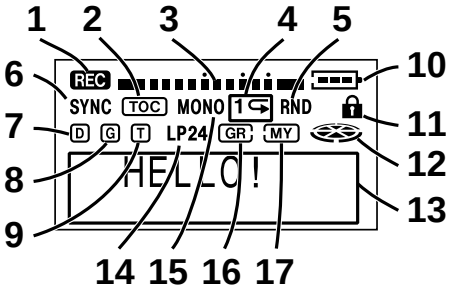
■ Main unit



1. Stop/Power Off/Hold Button
2. Record Indicator
3. Play/Fast Forward/Fast Reverse/ Volume Button
4. Battery Connection Terminals
5. Multi-link Station Connection Terminal
6. Microphone Input Socket
7. Remote Control/ Earphone Output Socket
8. Open Lever
9. Rechargeable Battery Cover

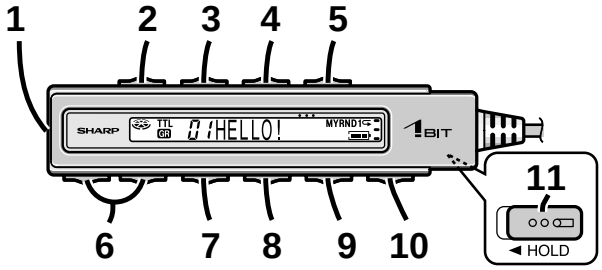


■ Multi-link station display

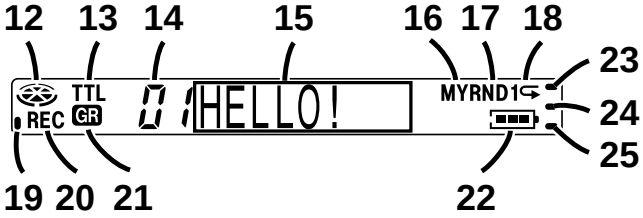


1. Record Indicator
2. TOC Indicator
3. Level Meter
4. Repeat Indicator
5. Random Indicator
6. Synchro Recording Indicator
7. Disc Information Indicator
8. Group Information Indicator
9. Track Information Indicator
10. Battery Indicator
11. Track Protection Indicator
12. Disc Mode Indicator
13. Character/Time Information Indicator
14. Long-Play/Recording Mode Indicator
15. Monaural Mode Indicator
16. Group Indicator
17. My Entry Indicator

■ Remote control unit



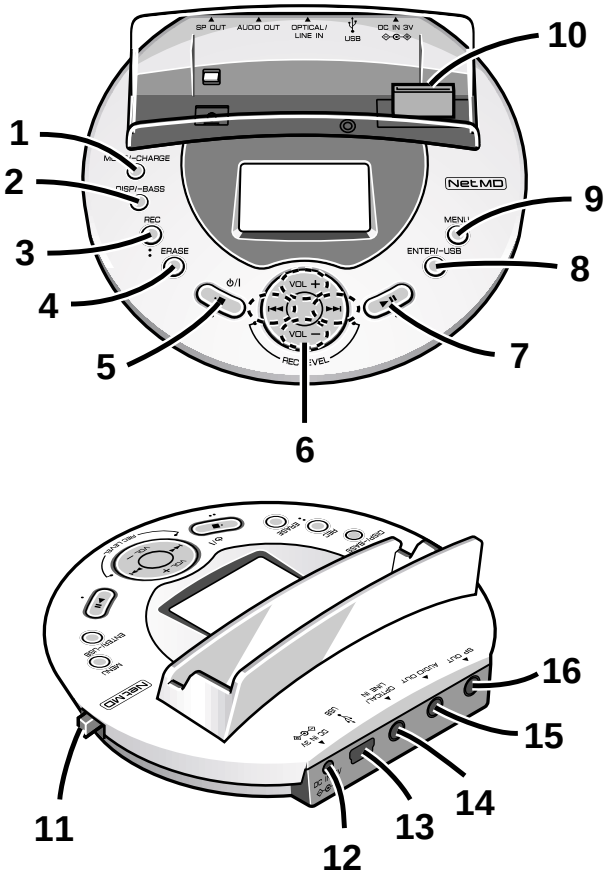
1. Earphones Socket
2. Record Button
3. Display/Bass Button
4. Playback or Recording Mode Switching Button
5. Menu Button
6. Volume Buttons
7. Stop/Power Off Button
8. Fast Reverse/Recording Level/ Menu Select Button
9. Play/Pause Button
10. Fast Forward/Recording Level/ Menu Select Button
11. Hold Switch
12. Disc Mode Indicator
13. Total Track Number Indicator
14. Track Number Indicator
15. Character/Time Information Indicator
16. My Entry Indicator
17. Random Indicator
18. Repeat Indicator
19. TOC Indicator
20. Record Indicator
21. Group Indicator
22. Battery Indicator
23. Synchro Recording Indicator
24. Auto Track Mark Record Indicator
25. Alarm Indicator



IM-DR580H

■ Multi-link station

1. Playback/Recording Mode Switching/ Charge Button
2. Display/Bass Button
3. Record Button
4. Erase Button
5. Power On or Off/Stop Button
6. Fast Forward/Fast Reverse/ Recording Level/Volume Button
7. Play/Pause Button
8. Enter/USB Switching Button
9. Menu Button
10. Connection Terminal to Main Unit
11. Speaker Output Selector Switch
12. 3 V DC Input Socket
13. USB Socket
14. Optical/Line Input Socket
15. Audio Output Socket
16. Speaker Output Socket



DISASSEMBLY

Cares before disassembling

When assembling the machine after disassembling or repair, observe the following requirements so as to ensure safety and performance.

1. Remove the batteries from the machine, and take out the mini-disc.
2. When assembling after repair, be sure to position the wires in the same location.
   Use the specified screws to fix the cabinet and the mechanism unit. The use of the screws with length other than specified may cause contact with the mechanism unit resulting in malfunction.
3. When repairing, pay close attention so not to damage the IC from static electricity.

Main Unit

STEP	REMOVAL	PROCEDURE	FIGURE
1	Bottom Cabinet	1. Remove the rechargeable battery cover as indicated by the arrow. 2. Screw ..... (A1) x5	7-2 7-1
2	Main PWB	1. Screw ..... (B1) x2 2. Screw ..... (B2) x1 3. Flexible PWB ..... (B3) x3	7-2
3	Top Cabinet	1. Open the Top cabinet. 2. Screw ..... (C1) x4	7-1 7-2
4	MD Mechanism	1. Remove the center cabinet as indicated by the arrow. 2. Screw ..... (D1) x1	7-3
5	Operation Button Flexible PWB Ass'y	1. Screw..... (E1) x1	7-4

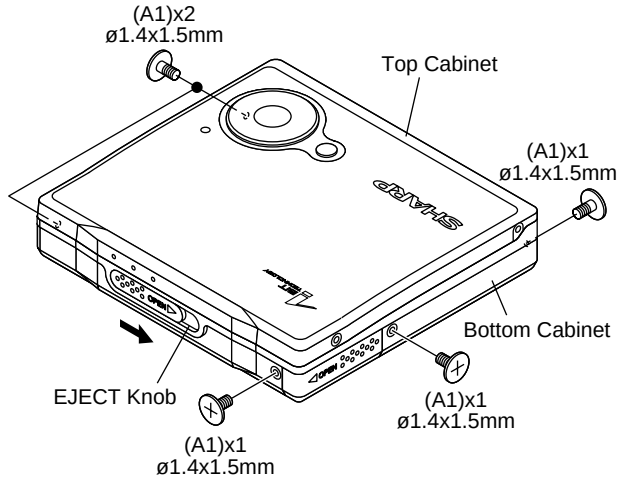
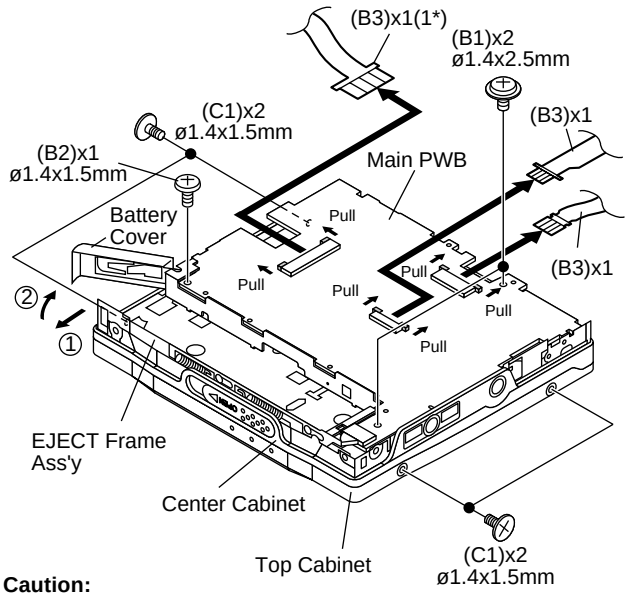


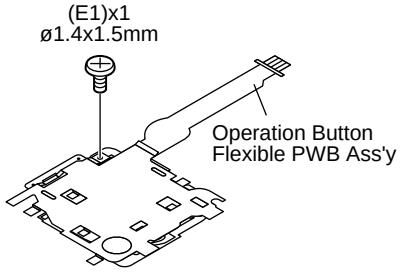
Figure 7-1



Caution:

Carefully handle the main PWB and flexible PWB. After removing the flexible PWB (1*) for the optical pickup from the connector, do not touch directly the front end of flexible PWB with your hand so as to prevent damage of optical pickup by static electricity.

Figure 7-2



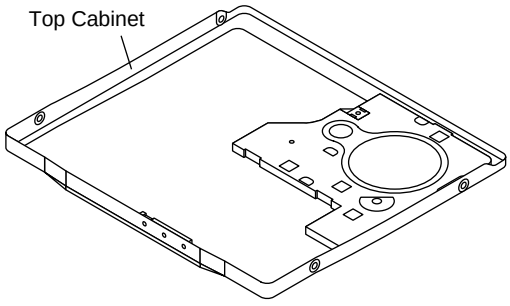


Figure 7-4

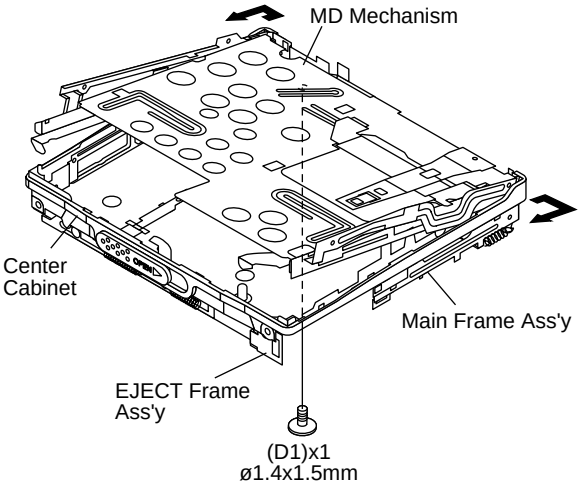


Figure 7-3

Multi-Link Station			
STEP	**REMOVAL**	**PROCEDURE**	**FIGURE**
1	Bottom Cabinet	1. Screw ..... (A1) x4	8-1
2	Multi-Link Station B PWB	1. Hook ..... (B1) x3 2. Flat Cable ..... (B2) x1 3. Hook ..... (B3) x2 4. Multi-Link Station B PWB Holder ..... (B4) x1	8-2
3	Multi-Link Station A PWB	1. Hook ..... (C1) x2	8-2

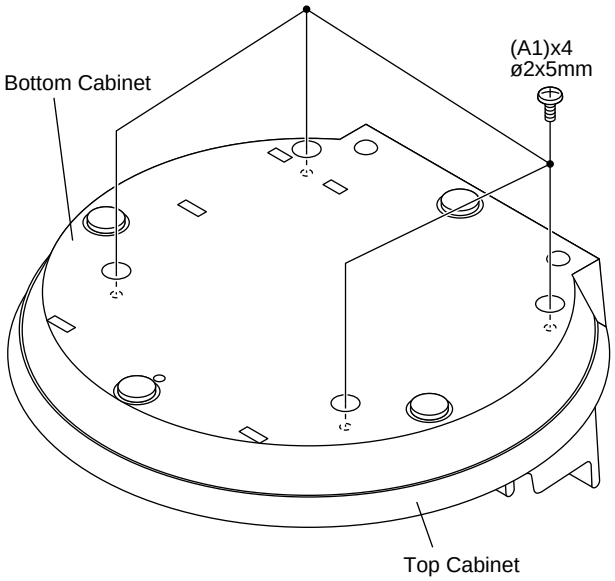


Figure 8-1

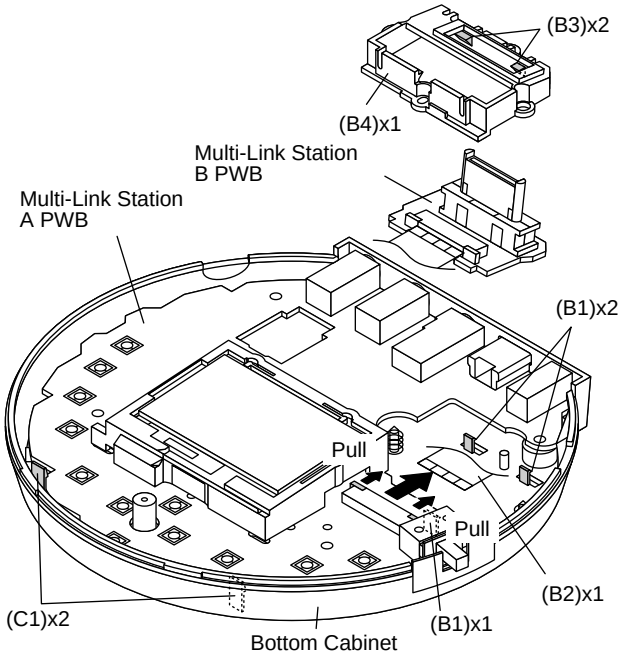


Figure 8-2

REMOVING AND REINSTALLING THE MAIN PARTS

Remove the MD mechanism according to the disassembling methods 1 to 4. (See Page 7.)

How to remove the spindle motor (See Fig. 9-1.)

1. Remove the solder joints (A1) x 4 of flexible PWB.
2. Remove the screws (A2) x 3 pcs., and remove the spindle motor.

How to remove the lift motor (See Fig. 9-2.)

1. Remove the solder joints (B1) x 2 of lift motor lead wire.
2. Remove the screw (B2) x 1 pc., and remove the lift motor.

Note:
Take care so that the motor gear is not damaged.
(If the gear is damaged, noise is caused.)

How to remove the sled motor (See Fig. 9-3.)

1. Remove the stop washer (C1) x 1 pc., and remove the drive gear (C2) x 1 pc.
2. Remove the screws (C3) x 2 pcs.
3. Remove the solder joints (C4) x 3 of flexible PWB., and remove the sled motor.

Note:
Take care so that the motor gear is not damaged.
(If the gear is damaged, noise is caused.)

How to remove the magnetic head ass'y (See Fig. 9-4.)

1. Remove the screws (D1) x 2 pcs., of the magnetic head ass'y and the optical pickup, and remove the solder joints (D2) x 2 of the head flexible plate.

Note:
Mount carefully so as not to damage the magnetic head.

How to reinstall the optical pickup (See Fig. 9-4.)

1. Remove the screw (E1) x 1 pc., and remove the grip spring.
2. Remove the screw (E2) x 1 pc., to remove the thrust spring, and remove the drive screw and the optical pickup from MD mechanism.
   Then, remove the drive screw from the optical pickup.

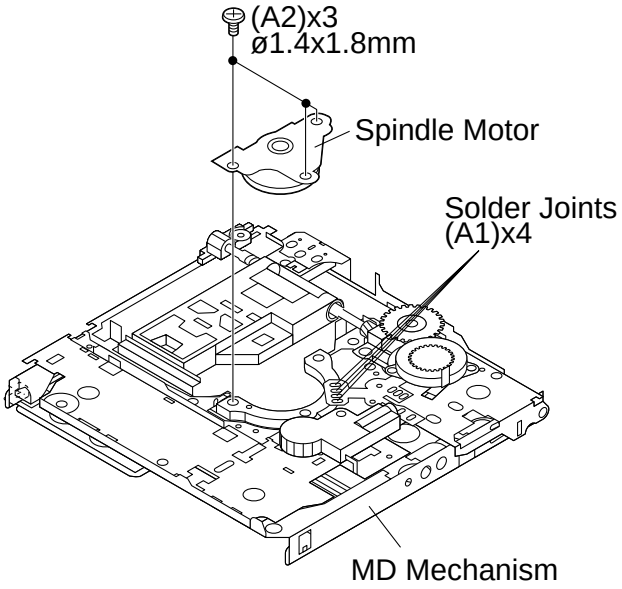


Figure 9-1

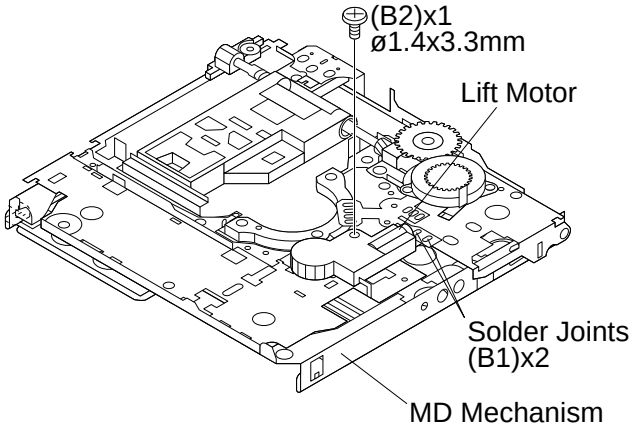


Figure 9-2

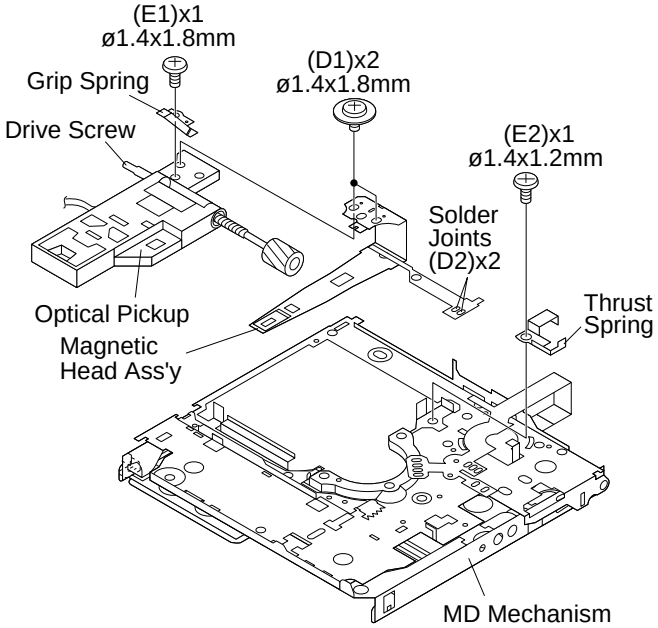


Figure 9-4

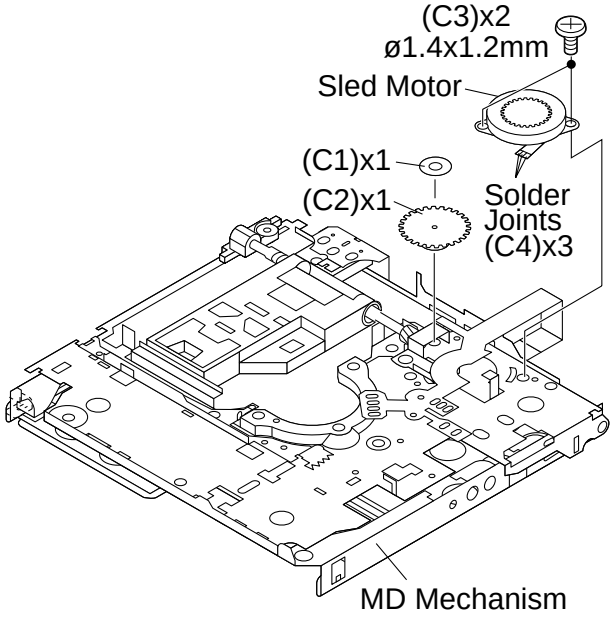


Figure 9-3

ADJUSTMENT

● Test disc

MD adjustment needs two types of disc, namely recording disc (low reflection disc) and playback-only disc (high reflection disc).

	Type	Test disc	Parts No.
1	High reflection disc	MMD-110 (TEAC Test MD)	88GMMD-110
2	Low reflection disc	MMD-213A (TEAC Test MD)	88GMMD-213A
3	Low reflection disc	Recording mini disc	UDSKM0001AFZZ
4	Extension cable	Performance test (extension cable for motors)	QCNWN6936AFZZ
5	Extension relay PWB	Performance test (extension relay PWB for motors)	RUNTK0613AFZZ

Note: Use the low reflection disc on which music has been recorded.

● Entering the TEST mode

1. Setting by main unit or multi-link station operation (in the stand-by state)

① Keep holding down the VOLUME + button and press the PLAY button.
② With the PLAY button pressed, release the VOLUME + button.
③ With the PLAY button pressed, release the VOLUME – button.
④ Keep holding down the VOLUME – button, release the PLAY button and then release the VOLUME – button.
⑤ The test mode stops, and [T E S T _] appears.

2. Setting by remote control operation (in the stand-by state)

① Switch the HOLD button from OFF to ON.
② Hold down the VOLUME – button.
③ With the VOLUME – button pressed, switch the HOLD button to from ON to OFF. (Complete steps ① to ③ within 2 seconds.)
④ Keep holding down the VOLUME – button and release the PLAY button.
⑤ With the PLAY button pressed, release the VOLUME – button and then release the PLAY button.
⑥ The test mode stops, and [T E S T _] appears.
⑦ Press “VOLUME +” to check the version of the microcomputer. (It is displayed on the remote control only.)
⑧ Press “VOLUME –” to light up the whole LCD.

● Leaving the TEST mode

① Press the STOP button in the test mode stop state, and with the version displayed or the whole LCD on.
② Update the rewritable area of EEPROM.
③ Switch to the stand-by mode.

● Shipping setting method (Perform it with the battery removed)

① Keep holding down the VOLUME – and the PLAY button on the main unit, and then plug in the AC adapter.
② Make sure [INIT] changes to [BYE OK] on the main unit or the remote control.

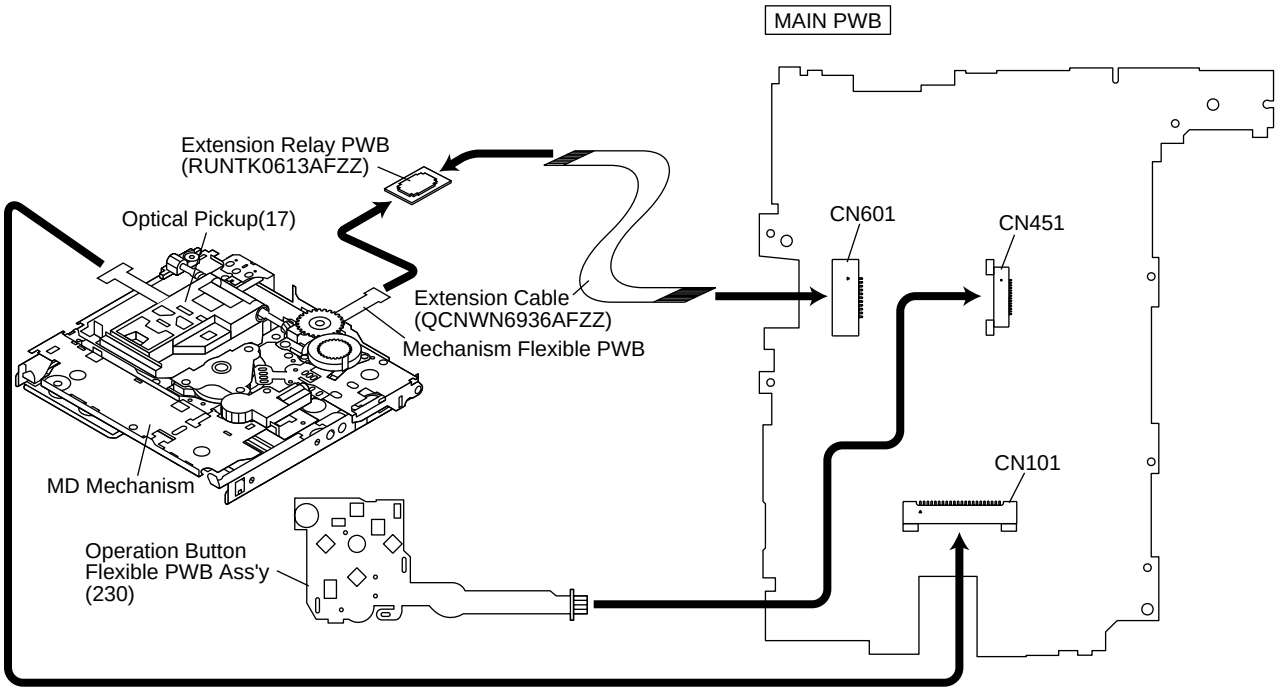


Figure 10

● To enter each mode from the test mode STOP "TEST"

Press the MENU button (on the remote control or multi-link station).
Select each mode using the SKIP UP/DOWN button.

● Test Mode

1. AUTO 1 Mode	• Perform preliminary automatic adjustment. • If the combination of mechanism and pickup PWB has been changed, be sure to start from AUTO1.
2. AUTO 2 Mode	• Perform ATT (attenuator) automatic adjustment. • Perform continuous playback. (error rate display, jump test.)
3. T-PLAY Mode	• Continuous playback from the specified address is performed. • 1 jump or 10 jumps and manual movement. • C1 error rate display (pit section), ADIP error rate display (groove section). • The temperature correction is performed only when servo start is performed, but the posture correction is not performed during continuous playback.
4. T-REC Mode	• Continuous record from the specified address is performed. • Change of record laser output. (servo gain is also changed according to laser output.) • The temperature correction is performed only when servo start is performed, but the posture correction is not performed during continuous recording.
5. MANU 1 Mode	• Temperature is displayed. • Seeing the displayed adjustment value, perform preliminary manual adjustment. (Error rate indication, jump test.)
6. MANU 2 Mode	• Temperature is displayed. • Seeing the displayed adjustment value, perform ATT (attenuator) manual adjustment. • Continuous playback is performed. (error rate display, jump test.)
7. E_DATA display Mode	• Error information is displayed. • Error information is initialized.
8. NORMAL Mode	• The mode is changed from the TEST mode to the normal mode without adjustment. • In the normal mode the internal operation mode, memory capacity, etc. areindicated. • In the normal mode both temperature correction and posture correction are performed.
9. EEPROM Mode	• Factors of digital servo are changed manually. • Cut-off frequency of BASS1, BASS2 and BASS3 is changed manually. • Temperature detection terminal voltage is measured, and the reference value is set. • Defaults are selected and set. • Setting of EEPROM protect area is updated.

● Operation in each TEST mode

1. AUTO 1 Mode

- When the STOP button is pressed while the AUTO1 menu appears or during automatic adjustment, the mode changes to the TEST mode stop state. At this time the adjustment value is not output.
- Be sure to adjust, using the specified disc MMD-213A.
- Adjustment NG; Adjustment item out of range, focus ON failure, and adjustment error.
- When the PLAY button is pressed while ADJ. OK is displayed, AUTO2 is executed.

2. AUTO 2 Mode

- When the STOP button is pressed while the AUTO2 menu appears or during automatic adjustment, the mode changes to the TEST mode stop state. At this time the adjustment value is not output.
- Adjustment NG; Adjustment item out of range, and adjustment error.
- When the PLAY button is pressed while ADJ. OK is displayed, TEST_PLAY is executed.

3. T-PLAY Mode

- When the STOP button is pressed while the PLAY menu appears, or in PLAY or continuous playback mode, the mode changes to the TEST mode stop state.
- When the PLAY button is pressed while the PLAY menu appears, continuous playback is initiated from the current pickup position.
- Whenever the MENU button is pressed in the PLAY menu, the target address changes as follows.
  0032 → 03C0 → 0700 → 08A0 → 0950 → 0032 → •••
  When the PLAY button is pressed while a target address is displayed, continuous playback is performed after searching that address.
- Each time the REC button is pressed while the PLAY mode target address is displayed, the digit which is changed by pressing the FORWARD/REVERSE button is changed as follows.
  00<u>3</u>2 → 0<u>0</u>32 → <u>0</u>032 → 00<u>3</u><u>2</u> → •••
- When the FORWARD button is pressed in the PLAY mode target address is displayed, the digit of address specified by the REC button is set to +1h. (0 to F)
- When the REVERSE button is pressed in the PLAY mode target address is displayed, the digit of address specified by the REC button is set to -1h. (0 to F)
  * When the fast FORWARD/REVERSE button is kept pressed, the selected digit number continuously varies in a cycle of 100 ms.
- If you press the MENU button on the remote control in the continuous playback mode, the number of jumps changes as follows.
  1 → 10 → 100 step → 1 •••
  * After the number of jump lines is indicated for one second, the address indication is restored. [▲▲▲ T R _]
- When the FORWARD button is pressed in the continuous playback mode, the specified number of lines is jumped in the FWD direction.
- When the REVERSE button is pressed in the continuous playback mode, the specified number of lines is jumped in the REV direction.
  * When the FORWARD/REVERSE button is held down, jump is repeated every approx. 100 ms.
- Whenever the MENU button is pressed in the continuous playback mode, the indication changes as follows.

* Pre-mastered disc

Continuous playback (SUBQ address indication)	[S Q □ □ □ □]
↓	
Continuous playback (C1 error indication)	[C E ☆ ☆ ☆ ☆]
↓	
Continuous playback (SUBQ address indication)	[S Q □ □ □ □]

* Recordable disk

Continuous playback (ADIP address indication)	[A P □ □ □ □]
↓	
Continuous playback (C1 error indication)	[C E ☆ ☆ ☆ ☆]
↓	
Continuous playback (ADIP error indication)	[A E ★ ★ ★ ★]
↓	
Continuous playback (Integrating jitter indication)	[✳ ✳ b △ △ △]
↓	
Continuous playback (ADIP address indication)	[A P □ □ □ □]

4. T-REC Mode

- When the STOP button is pressed while the REC menu appears, or in the REC mode or continuous record mode, the mode changes to the TEST mode stop state.
- Whenever the MENU button is pressed in the REC menu, the target address changes as follows.

  0032 → 03C0 → 0700 → 08A0 → 0950 → 0032 → •••

  When the PLAY button is pressed while a target address is displayed, continuous playback is performed after searching that address.
- Whenever the REC button is pressed in the REC mode target address is displayed, the digit which is changed by the VOLUME +/– button changes as follows.

  003<u>2</u> → 00<u>3</u>2 → 0<u>0</u>32 → <u>0</u>032 → •••
- When the FORWARD button is pressed in the REC mode target address is displayed, the digit of address specified by the REC button is set to +1h. (0 to F)
- When the REVERSE button is pressed in the REC mode target address is displayed, the digit of address specified by the REC button is set to -1h. (0 to F)

  * When the FORWARD/REVERSE button is held down, the setting changes continuously, one cycle being 100 ms.
- When the VOLUME +/– button is pressed in the REC mode or continuous record mode, the laser record power changes.

  (Servo gain changes also according to record power.)

  * After the laser record power is indicated for one second, the address indication is restored. [R P W _ ▽ ▽]
- □ □ □ □ : Address
- ▽ ▽ : Laser power cord
- Operation is disabled if the premastered disc or disc is in miserase-protected state.

5. MANU 1 Mode

- Adjustment item to be made in AUTO1 mode is performed manually.
- When the VOLUME + button is pressed during adjustment, the setting increases, and the new setting is output.
- When the VOLUME – button is pressed during adjustment, the setting decreases and the new setting is output.
- If the VOLUME +/– button is held down, the setting changes continuously with 100 ms cycle.

  *In this operation, the setting change is performed for each digit. The digit is changed by pressing the REC button.
- If the setting is within the allowable range, the RND display lights.
- When the STOP button is pressed during MANU1 menu or measurement or adjustment, the state is changed to the TEST mode stop state.

6. MANU 2 Mode

- Adjustment item to be made in AUTO2 mode is performed manually.
- When the VOLUME + button is pressed during adjustment, the setting increases, and the new setting is output.
- When the VOLUME – button is pressed during adjustment, the setting decreases and the new setting is output.
- If the VOLUME +/– button is held down, the setting changes continuously with 100 ms cycle.

  *In this operation, the setting change is performed for each digit. The digit is changed by pressing the REC button.
- If the setting is within the allowable range, the RND display lights.
- When the STOP button is pressed during MANU2 menu or measurement or adjustment, the state is changed to the TEST mode stop state.
- When the PLAY button is pressed in B-ATT set state, the mode is changed to the continuous playback mode.
- As for operation during continuous playback refer to "T-PLAY mode explanation".

7. E_DATA display Mode

- Reversing when REVERSE button is pressed.
- When the STOP button is pressed while the error data indication menu appears or during error data indication, the mode changes to the TEST mode stop state.
- Error data E0 is the latest error.
- Error which occurred in the TEST mode is also stored in the memory.
- When the GROUP button is pressed while the error data indication menu appears, the error data is initialized.

  [C L E A R _]

  ◇ ◇ : Error Code

8. NORMAL Mode

- When the STOP button is pressed while the NORMAL menu appears, the mode changes to the TEST mode stop state.
- Indication during operation Indication of memory capacity on main unit LCD

  (Multi-Link Station)

  [□ □ _ ✳ ✳ ✳ ✳ _ ✳ ✳] + Level meter

  □ □ : Internal mode

  ✳ ✳ ✳ ✳ : Address (Cluster section)

  ✳ ✳ : Address (Sector section)

  (Remote Control)

  [T N O □ □ ✳ ✳ ✳ _]

  □ □ : Internal mode

  ✳ ✳ ✳ : Address (Cluster section)
- Selection of sound volume, BASS, etc. is possible. (without indication)
- Recording is also possible.
- If the STOP button is pressed during operation in the NORMAL mode, the NORMAL mode is cancelled, and the power is turned off.

● Explanation of error history code

13 h : Adjustment servo retraction excessive retrial
16 h : C. IN detection time-over
17 h : A, B, E, F, and TCRSO offset measurement value out of tolerable range
21 h : Focus retraction completion allowable time-over
22 h : Unable to activate the spindle motor
23 h : Track search completion allowable time-over
32 h : P-TOC read failure
42 h : U-TOC read failure
44 h : U-TOC write data write disabled/read check error
45 h : U-TOC write test failure
52 h : SD write data write disabled
72 h : EEPROM data read check sum error
73 h : Record head drive disabled (by EJECT lever)
82 h : Power overvoltage detection
83 h : The temperature sensor output error
91 h : Ambient temperature is higher that the allowable temperature

● Error messages

Can't READ (*)
* = f : Focus pulled
a : Servo adjustment
s : Track search
r : TOC information reading
p : Spindle start

Er-MD (**)
** = 80
"Er-MD 80" appears when EEPROM data cannot be read correctly (inconsistency of data and the checksum results).
EEPROM or communication paths including the microcomputer may be defective.
When you change EEPROM, reset data by referring to the service manual.
** = 41
"Er-MD41" appears when writing U-TOC fails. (Only recorders)
(Reading of the written data reveals errors.)
The record head, the recording signal generator circuit including system LSI or the pickup laser may be defective.

TOC FORM (*)
* = t_ : TNO information
a_: Address information
Ln: Pointer information
(n = 0, 1, 2 or 4: UTOC sector number)

Temperature reference setting method.

[1] Measurement, calculation and setting procedure.

① Set the TEST mode.
② Activate the "Temp" menu in the "EEPROM" mode.
- In the test mode stop state, press the MENU button, SKIP-DOWN button (three times), and PLAY button (twice) in this order.
- "TM$$%%" appears. ($$ = temperature code, %% = temperature reference value)

③ "TPin##" will appear when pressing the SKIP-UP button once. (## = TEMP input AD value)
④ Calculate the temperature correction value by referring to the ambient temperature and the "Temperature measurement value correction table".
⑤ Calculate the temperature reference value according to the formula below.
- Temperature reference value = Microcomputer TEMP input AD value + Temperature correction value

⑥ Press the SKIP-DOWN button once to display "TM$$%%". Press the VOLUME –/+ button to set "%%" to the value calculated in step ⑤.
⑦ Check if the temperature code ($$) is the same as in the "Temperature measurement value correction table"

[2] Temperature measurement value correction table.

Ambient temperature	Temperature correction	Center temperature
+ 8 °C ~ +10 °C	- 05 h	+ 8.5 °C
+11 °C ~ +13 °C	- 04 h	+ 11.6 °C
+14 °C ~ +16 °C	- 03 h	+ 14.6 °C
+17 °C ~ +19 °C	- 02 h	+ 17.6 °C
+20 °C ~ +22 °C	- 01 h	+ 20.6 °C
+23 °C ~ +25 °C	± 00 h	+ 23.6 °C
+26 °C ~ +28 °C	+ 01 h	+ 26.6 °C
+29 °C ~ +31 °C	+ 02 h	+ 29.6 °C
+32 °C ~ +34 °C	+ 03 h	+ 32.6 °C

[3] Temperature code identification.

Ambient temperature	Temperature correction	Center temperature
- 8 °C ~ +10 °C	08 h	+ 0.5 °C
+ 3 °C ~ +21 °C	07 h	+ 12.0 °C
+14 °C ~ +33 °C	06 h	+ 23.6 °C
+26 °C ~ +44 °C	05 h	+ 35.0 °C

● EEPROM DATA LIST (EEPROM version : d)

Focus setting

Item display	Set values
F G 1 _○○	24 H
F G 2 _○○	58 H
F G 3 _○○	90 H
F F 0 _○○	10 H
F F 1 _○○	70 H
F F 2 _○○	E5 H
F f 0 _○○	10 H
F f 1 _○○	48 H
F f 2 _○○	EA H
f F 0 _○○	10 H
f F 1 _○○	18 H
f F 2 _○○	EC H
F Z H _○○	ED H
F L n _○○	09 H
F L p _○○	06 H
D J G _○○	0C H
F S S _○○	0C H
F T S _○○	18 H
F S B _○○	18 H
F T B _○○	28 H
F G M _○○	66 H
T V G _○○	C0 H
T O 1 _○○	2A H
T O 5 _○○	2A H
T O R _○○	2A H
P L E _○○	8B H
R F T _○○	00 H
F L 1 _○○	0F H
F L 2 _○○	1F H
F G C _○○	5A H
T V R _○○	C0 H

Spindle setting

Item display	Set values
S P G _○○	0C H
S P 1 _○○	18 H
P G 2 _○○	18 H
R G 2 _○○	1C H
R G 3 _○○	1C H
P G M _○○	C0 H
S P 1 _○○	10 H
S P 2 _○○	60 H
S P 3 _○○	F2 H
S P 4 _○○	F2 H
S 4 2 _○○	F2 H
S 4 3 _○○	F8 H
S P 5 _○○	10 H
S L 1 _○○	7F H
S L 2 _○○	7F H
S D 2 _○○	7F H
S P K _○○	EB H
M P 1 _○○	14 H
M P 2 _○○	01 H
S P L _○○	60 H
S P B _○○	11 H
S R i _○○	30 H
S R m _○○	26 H
S R o _○○	1E H
S B R _○○	60 H
O S L _○○	14 H
P J G _○○	34 H
B T R _○○	78 H
S W T _○○	44 H

Tracking setting

Item display	Set values
T G 1 _ ○ ○	17 H
T G 2 _ ○ ○	40 H
T G 3 _ ○ ○	66 H
T F 0 _ ○ ○	10 H
T F 1 _ ○ ○	70 H
T F 2 _ ○ ○	E0 H
T f 0 _ ○ ○	10 H
T f 1 _ ○ ○	40 H
T f 2 _ ○ ○	E4 H
t F 0 _ ○ ○	10 H
t F 1 _ ○ ○	20 H
t F 2 _ ○ ○	E8 H
T F S _ ○ ○	00 H
T B o _ ○ ○	20 H
T B t _ ○ ○	34 H
T K o _ ○ ○	20 H
T K t _ ○ ○	32 H
T D o _ ○ ○	67 H
T D t _ ○ ○	0E H
S C o _ ○ ○	00 H
S C t _ ○ ○	3A H
S C m _ ○ ○	48 H
C L p _ ○ ○	24 H
C L r _ ○ ○	38 H
J P I _ ○ ○	0E H
T K L _ ○ ○	40 H
T H P _ ○ ○	02 H
T H G _ ○ ○	02 H
T 0 P _ ○ ○	F0 H
T 0 G _ ○ ○	EF H
T 1 P _ ○ ○	18 H
T K n _ ○ ○	11 H
T K N _ ○ ○	26 H
T K T _ ○ ○	16 H
T D T _ ○ ○	16 H
T D L _ ○ ○	1F H
T G C _ ○ ○	66 H
T G M _ ○ ○	66 H
S P W _ ○ ○	0F H
T R 0 _ ○ ○	00 H
T R 1 _ ○ ○	00 H

Sled setting

Item display	Set values
S K S _ ○ ○	7F H
S K L _ ○ ○	7F H
S L C _ ○ ○	42 H
S T L _ ○ ○	08 H
S T M _ ○ ○	42 H
S T E _ ○ ○	A6 H
S D V _ ○ ○	60 H
S J P _ ○ ○	03 H
W T m _ ○ ○	18 H
S R V _ ○ ○	59 H
S L T _ ○ ○	58 H
M V S _ ○ ○	0A H
S L S _ ○ ○	28 H
S K E _ ○ ○	25 H
S D E _ ○ ○	23 H
B P E _ ○ ○	31 H
B P W _ ○ ○	97 H
B P 1 _ ○ ○	43 H
B R E _ ○ ○	94 H
B R W _ ○ ○	34 H
S R S _ ○ ○	00 H
S H C _ ○ ○	42 H
S H S _ ○ ○	28 H

Digital EQ setting

Item display	Set values
H Q 1 _ ○ ○	90 H
H Q 2 _ ○ ○	90 H
H S G _ ○ ○	11 H
H S O _ ○ ○	FF H
L Q 1 _ ○ ○	90 H
L Q 2 _ ○ ○	90 H
L S G _ ○ ○	12 H
L S O _ ○ ○	00 H
G Q 1 _ ○ ○	98 H
G Q 2 _ ○ ○	84 H
G S G _ ○ ○	12 H
A L S _ ○ ○	3F H
R C N _ ○ ○	00 H
E Q R _ ○ ○	00 H

IM-DR580H

Control setting

Item display	Set values
C T 0 _ ○ ○	03 H
C T 1 _ ○ ○	01 H
C T 2 _ ○ ○	BB H
C T 3 _ ○ ○	50 H
U S A _ ○ ○	18 H
R C E _ ○ ○	94 H
X 2 T _ ○ ○	FF H
S D F _ ○ ○	1F H
F B O _ ○ ○	FC H
B H S _ ○ ○	01 H
F B L _ ○ ○	16 H
M C 2 _ ○ ○	00 H
M C 4 _ ○ ○	00 H
L 2 H _ ○ ○	81 H
L 4 H _ ○ ○	80 H
B S 0 _ ○ ○	3A H
B S 1 _ ○ ○	98 H
B U 0 _ ○ ○	01 H
B D 0 _ ○ ○	05 H
B D 1 _ ○ ○	DC H
B M K _ ○ ○	1E H
C S T _ ○ ○	65 H
I J U _ ○ ○	81 H
I J D _ ○ ○	55 H
M C T _ ○ ○	A1 H
E R C _ ○ ○	5A H
C V 0 _ ○ ○	27 H
C V 1 _ ○ ○	10 H
S S K _ ○ ○	E9 H
A C T _ ○ ○	60 H
C 1 E _ ○ ○	52 H
A D E _ ○ ○	C0 H
L C V _ ○ ○	12 H
w E 3 p ○ ○	05 H
w E 3 g ○ ○	00 H
w E A _ ○ ○	16 H
w E F _ ○ ○	00 H
R C 0 _ ○ ○	D7 H
R C 1 _ ○ ○	D6 H
R 2 0 _ ○ ○	80 H
R 2 1 _ ○ ○	20 H
R 4 0 _ ○ ○	BF H

Item display	Set values
R 4 1 _ ○ ○	02 H
G U P _ ○ ○	1B H
S C G _ ○ ○	00 H
K 1 0 _ ○ ○	0F H
K 1 1 _ ○ ○	8E H
A T N _ ○ ○	0C H
A T U _ ○ ○	0A H
A H D _ ○ ○	4D H
A L D _ ○ ○	60 H
A C T _ ○ ○	01 H
P L G _ ○ ○	22 H
C R N _ ○ ○	00 H
S V V _ ○ ○	80 H
A V V _ ○ ○	70 H
V S N _ ○ ○	BB H

BASS setting

Item display	Set values
B S 0 _ ○ ○	00 H
B S 1 _ ○ ○	00 H
B S 2 _ ○ ○	50 H
B S 3 _ ○ ○	00 H
B S 4 _ ○ ○	00 H
B S 5 _ ○ ○	00 H
B S 6 _ ○ ○	00 H
B S 7 _ ○ ○	22 H
B S 8 _ ○ ○	00 H

ADJ. SET setting

Item display	Set values
C O K _ ○ ○	28 H
F A T _ ○ ○	C0 H
T A T _ ○ ○	3E H
C A T _ ○ ○	40 H
F A B _ ○ ○	64 H

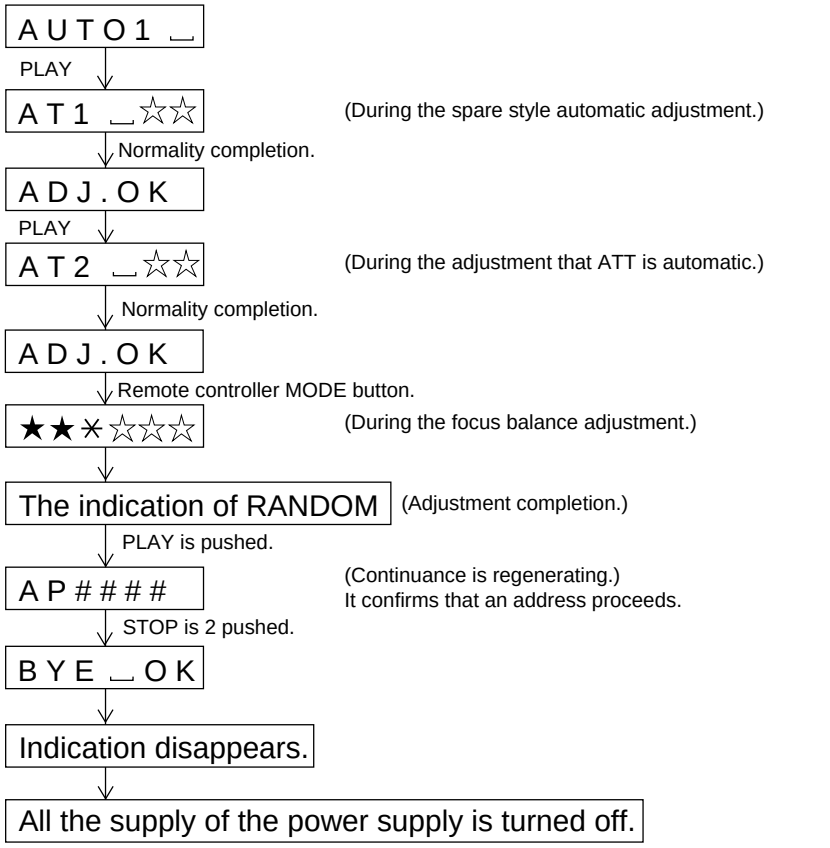
ROM Correction setting

Item display	Set values
R M 0 0 ○ ○	37 H
R M 0 1 ○ ○	32 H
R M 0 2 ○ ○	36 H
R M 0 3 ○ ○	42 H
R M 0 4 ○ ○	18 H
R M 0 5 ○ ○	0B H
R M 0 6 ○ ○	E2 H
R M 0 7 ○ ○	B6 H
R M 0 8 ○ ○	7E H
R M 0 9 ○ ○	8F H
R M 0 A ○ ○	44 H
R M 0 B ○ ○	36 H
R M 0 C ○ ○	4E H
R M 0 D ○ ○	52 H
R M 0 E ○ ○	7E H
R M 0 F ○ ○	8F H
R M 1 0 ○ ○	1F H
R M 1 1 ○ ○	BD H
R M 1 2 ○ ○	E7 H
R M 1 3 ○ ○	02 H
R M 1 4 ○ ○	38 H
R M 1 5 ○ ○	05 H
R M 1 6 ○ ○	6A H
R M 1 7 ○ ○	05 H
R M 1 8 ○ ○	C7 H
R M 1 9 ○ ○	01 H
R M 1 A ○ ○	AE H
R M 1 B ○ ○	17 H
R M 1 C ○ ○	FC H
R M 1 D ○ ○	BA H
R M 1 E ○ ○	E2 H
R M 1 F ○ ○	0B H
R M 2 0 ○ ○	04 H
R M 2 1 ○ ○	0E H
R M 2 2 ○ ○	DC H
R M 2 3 ○ ○	1B H
R M 2 4 ○ ○	FC H
R M 2 5 ○ ○	1D H
R M 2 6 ○ ○	DC H
R M 2 7 ○ ○	0E H
R M 2 8 ○ ○	10 H
R M 2 9 ○ ○	0B H
R M 2 A ○ ○	5A H
R M 2 B ○ ○	E5 H
R M 2 C ○ ○	7E H
R M 2 D ○ ○	3E H
R M 2 E ○ ○	CB H
R M 2 F ○ ○	01 H
R M 3 0 ○ ○	7E H
R M 3 1 ○ ○	7E H
R M 3 2 ○ ○	CC H

Item display	Set values
R M 3 3 ○ ○	01 H
R M 3 4 ○ ○	7E H
R M 3 5 ○ ○	6E H
R M 3 6 ○ ○	E2 H
R M 3 7 ○ ○	01 H
R M 3 8 ○ ○	FC H
R M 3 9 ○ ○	EB H
R M 3 A ○ ○	5A H
R M 3 B ○ ○	0B H
R M 3 C ○ ○	12 H
R M 3 D ○ ○	0B H
R M 3 E ○ ○	18 H
R M 3 F ○ ○	7B H
R M 4 0 ○ ○	C7 H
R M 4 1 ○ ○	E8 H
R M 4 2 ○ ○	AE H
R M 4 3 ○ ○	07 H
R M 4 4 ○ ○	B7 H
R M 4 5 ○ ○	AF H
R M 4 6 ○ ○	07 H
R M 4 7 ○ ○	B7 H
R M 4 8 ○ ○	B0 H
R M 4 9 ○ ○	07 H
R M 4 A ○ ○	D9 H
R M 4 B ○ ○	1F H
R M 4 C ○ ○	28 H
R M 4 D ○ ○	00 H
R M 4 E ○ ○	FC H
R M 4 F ○ ○	E9 H
R M 5 0 ○ ○	17 H
R M 5 1 ○ ○	0B H
R M 5 2 ○ ○	00 H
R M 5 3 ○ ○	00 H
R M 5 4 ○ ○	00 H
R M 5 5 ○ ○	00 H
R M 5 6 ○ ○	00 H
R M 5 7 ○ ○	00 H
R M 5 8 ○ ○	00 H
R M 5 9 ○ ○	00 H
R M 5 A ○ ○	00 H
R M 5 B ○ ○	00 H
R M 5 C ○ ○	00 H
R M 5 D ○ ○	00 H
R M 5 E ○ ○	00 H
R M 5 F ○ ○	00 H
R M 6 0 ○ ○	00 H
R M 6 1 ○ ○	00 H
R M 6 2 ○ ○	00 H
R M 6 3 ○ ○	00 H
R M 6 4 ○ ○	00 H

Do the following when replacing the mechanism, the pickup, the EEPROM (IC402), the LSI (IC201) or the main PWB unit.

Enter the test mode, move the pickup to the most internal periphery and execute AUTO1.
(Use the disc of MMD-213A.)


A U T O 1 ␣
PLAY
A T 1 ␣☆☆
(During the spare style automatic adjustment.)
Normality completion.
A D J . O K
PLAY
A T 2 ␣☆☆
(During the adjustment that ATT is automatic.)
Normality completion.
A D J . O K
Remote controller MODE button.
★★✳☆☆☆
(During the focus balance adjustment.)
The indication of RANDOM
(Adjustment completion.)
PLAY is pushed.
A P # # # #
(Continuance is regenerating.)
It confirms that an address proceeds.
STOP is 2 pushed.
B Y E ␣ O K
Indication disappears.
All the supply of the power supply is turned off.
(In such cases as the battery.)

Before you replace EEPROM, be sure to set the EEPROM set value to the latest version.
(Note) After that, be sure to perform the shipment setting.
(The battery indicator starts to operate correctly after you complete the setting.)

Test Mode Start · Completion method

• Starting method of the test mode

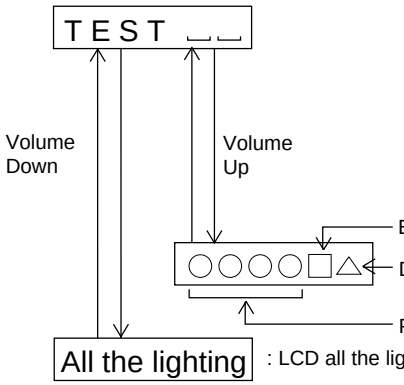
(1) When using the main unit and remote control

When the following operation is performed using the remote control while the product is in the stand-by state (the display is off), the test mode starts.
Switch the "HOLD" button from OFF to ON.
When the [VOLUME -] button is pressed and held, switch the [HOLD] button from ON to OFF. (Perform these steps within 2 seconds.) When the [VOLUME -] button is held down, press the [PLAY[button. When the [PLAY[button is held down, release the [VOLUME -] button.
Then release the [PLAY] button.

(2) When using the multi-link station

Place the main unit on the multi-link station.
When the [VOLUME +] button is pressed and held while the product is in the stand-by state, press the [PLAY] button.
When the [PLAY] button is held down, release the [VOLUME +] button and press the "VOLUME-" button.
When the [VOLUME -] button is held down, release the [PLAY] button. Then release the [VOLUME -] button.

Indication after the start :



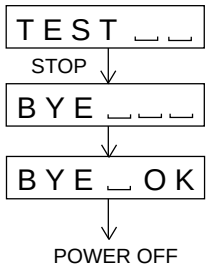
: To the test mode stop ([Test mode menu])

Performance mode	= Normal
Playback volume	= 28
LINE REC volume	= 30
Microphone REC volume	= 20
Resume setting	= Cancellation

: Version indication 2 seconds

: LCD all the lighting two seconds

• How to cancel the test mode

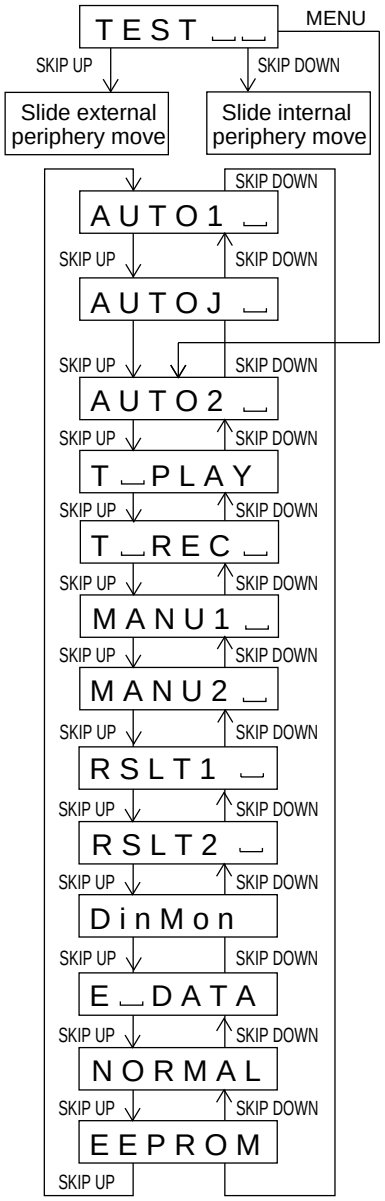


: Test mode stop

: [OK] or [NG]
Check the microcomputer RAM and EEPROM with the contents of the preliminary adjustment.

Pickup position initialisation
EEPROM contents renewal.

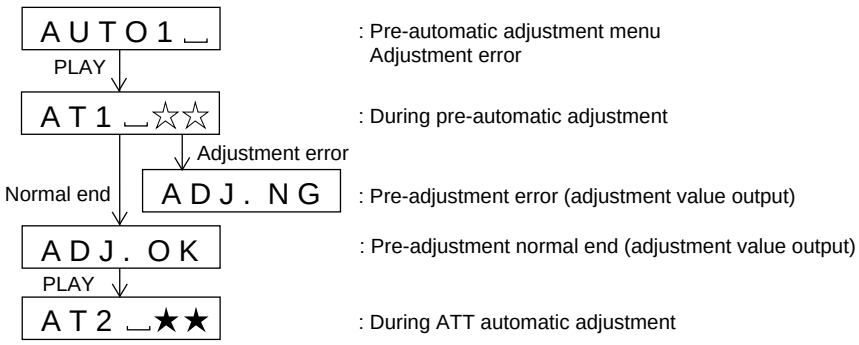
Change of Test Mode Menus



: Test mode stop
: Pre-automatic adjustment menu
: ATT auto adjustment menu
: Continuous playback menu
: Continuous record menu
: Pre-manual adjustment menu
: ATT manual adjustment menu
: Pre-adjustment value check menu
: ATT adjustment value check menu
: Digital input signal monitor menu
: Error history display menu
: Test mode normal play menu
: EEPROM setting menu

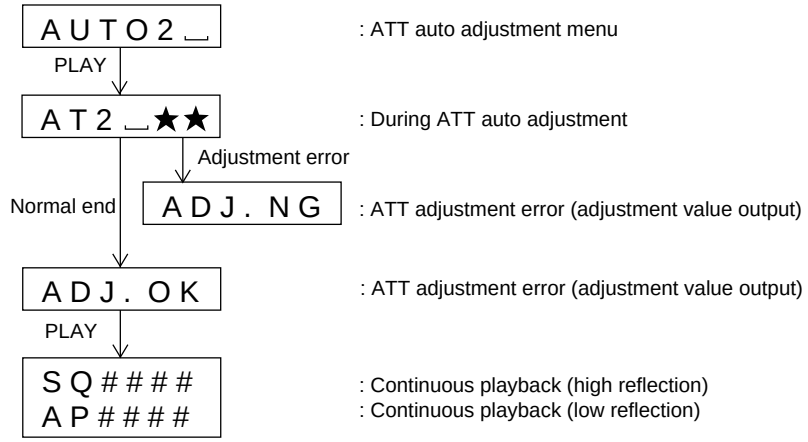
* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* When the [VOLUME +] button is pressed in the "TEST MODE STOP" state, the program version is displayed for 2 seconds.
* When the [VOLUME -] button is pressed in the "TEST MODE STOP" state, all the displays appear for 2 seconds.

Servo Pre-automatic Adjustment


A U T O 1 ⌴
: Pre-automatic adjustment menu
Adjustment error
PLAY
A T 1 ⌴☆☆
: During pre-automatic adjustment
Adjustment error
Normal end
A D J . N G
: Pre-adjustment error (adjustment value output)
A D J . O K
: Pre-adjustment normal end (adjustment value output)
PLAY
A T 2 ⌴★★
: During ATT automatic adjustment

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* Move the pickup lens manually to the innermost periphery before performing the servo preliminary auto adjustment. (Refer to "Change of test mode menus" for the operation method.)
* "☆☆" is the internal processing number, the meanings of the numbers are as follows.
  - 0 2 : ABEF input offset measurement
  - 0 4 : AB input (ABMAXO) level setting
  - 0 5 : Focus ATT tentative setting
  - 0 6 : Pit section EF input level setting
  - 0 7 : COUT level setting for pit section adjustment
  - 0 8 : Sled external periphery move
  - 0 9 : Groove section EF input level setting
  - 1 0 : COUT level setting for groove section adjustment
  - 1 1 : TCRS input level setting
  - 1 2 : Tracking ATT initial setting
  - 1 3 : AB input (LPFABO) level setting
  - 1 4 : Focus ATT initial setting
  - 1 6 : TCRS input offset measurement
* It is necessary for each test mode where servo operation is made to complete the preliminary adjustment. (Otherwise, "ErADJ." appears.)
* The preliminary adjustment complete state is stored on the EEPROM (protected field).

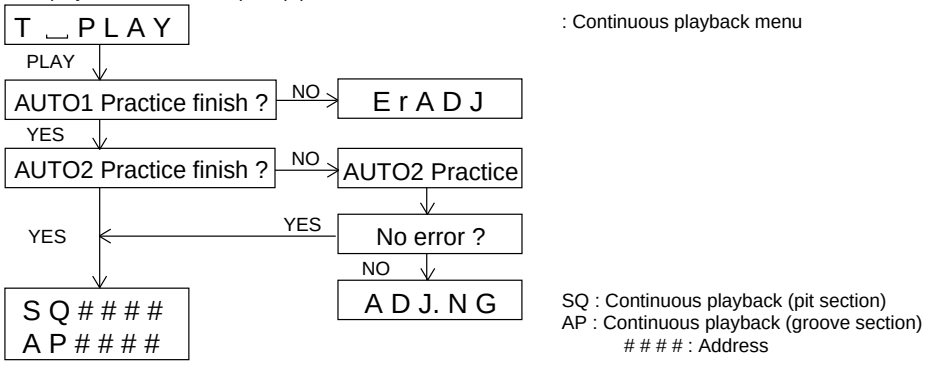
Servo ATT Auto Adjustment


A U T O 2 ⌴
: ATT auto adjustment menu
PLAY
A T 2 ⌴★★
: During ATT auto adjustment
Adjustment error
Normal end
A D J . N G
: ATT adjustment error (adjustment value output)
A D J . O K
: ATT adjustment error (adjustment value output)
PLAY
S Q # # # #
: Continuous playback (high reflection)
A P # # # #
: Continuous playback (low reflection)

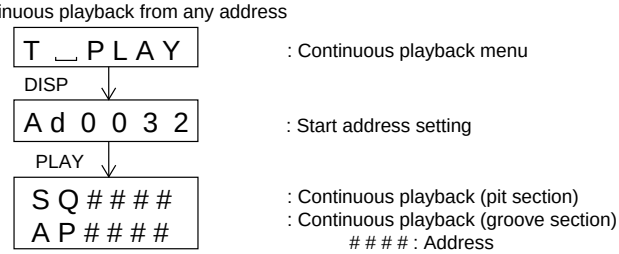
* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* Move the pickup lens manually to the innermost periphery before performing the servo ATT auto adjustment. (Refer to "Change of test mode menus" for the operation method.)
* "★★" represent the adjustment number as follows.
  - 0 0 : Initial setting
  - 0 3 : Pit section tracking ATT setting
  - 0 4 : Pit section focus ATT setting
  - 0 6 : Sled external periphery move (low reflection only)
  - 0 7 : TCRS ATT setting (low reflection only)
  - 0 8 : Groove section tracking ATT setting (low reflection only)
  - 0 9 : Groove section focus ATT setting (low reflection only)

Continuous Playback

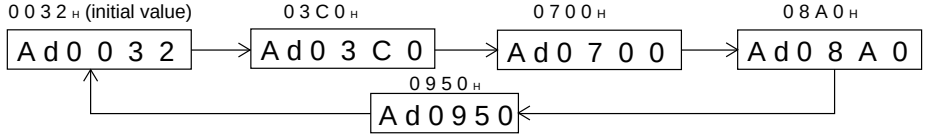
• Continuous playback from current pickup position



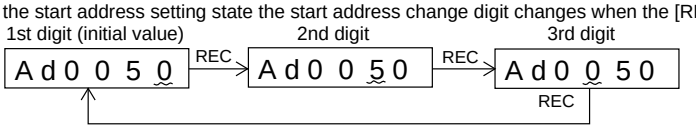
• Continuous playback from any address


T _ PLAY
: Continuous playback menu
DISP
A d 0 0 3 2
: Start address setting
PLAY
S Q # # # #
A P # # # #
: Continuous playback (pit section)
: Continuous playback (groove section)
: Address

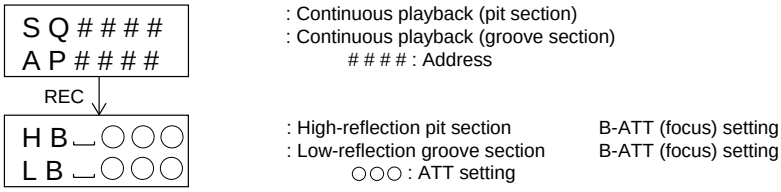
* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* In the start address set state the start address changes as follows when the [MENU] button is pressed.



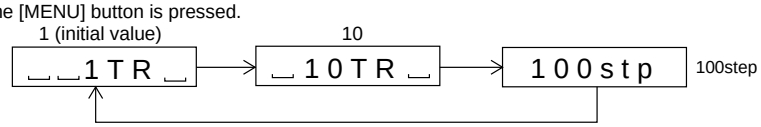
* In the start address setting state the start address change digit changes when the [REC] button is pressed.



* In the start address set state the value of selection digit changes in the range of "0h to Fh" when the [SKIP UP/DOWN] button is pressed.
* If the [REC] button is pressed in the continuous playback state, the mode is changed to the B-ATT setting state of the ATT manual adjustment.

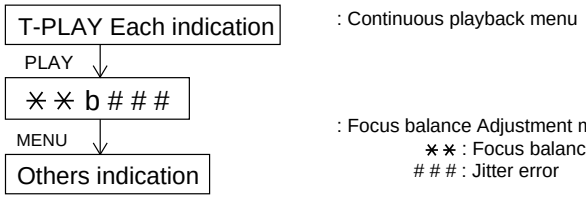

S Q # # # #
A P # # # #
: Continuous playback (pit section)
: Continuous playback (groove section)
: Address
REC
H B _ ○ ○ ○
L B _ ○ ○ ○
: High-reflection pit section
B-ATT (focus) setting
: Low-reflection groove section
B-ATT (focus) setting
○○○ : ATT setting

* In the continuous playback state the number of jump lines changes as follows shown the [MENU] button is pressed.



* When the [SKIP UP] button is pressed in the continued playback mode, jump of specified number of lines occurs in the external periphery direction.
If the key is held down jump occurs continuously. (100 ms cycle)
* When the [SKIP DOWN] button is pressed in the continuous playback mode, jump of specified number of lines occurs in the internal periphery direction.
If the key is held down, jump occurs continuously. (100 ms cycle)

• Focus balance Adjustment mode

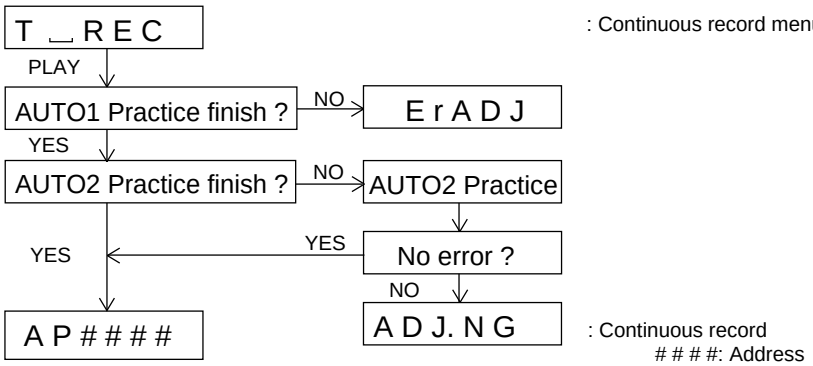


* The focus balance adjustment mode is available only for low reflection discs.
* The RANDOM marker lights up in the focus balance adjustment mode.
* The focus balance (✳✳) can be changed by the VOLUME +/- button operation.
* If the PLAY button is pressed in the focus balance adjustment mode, the unit returns to the continuous playback mode.

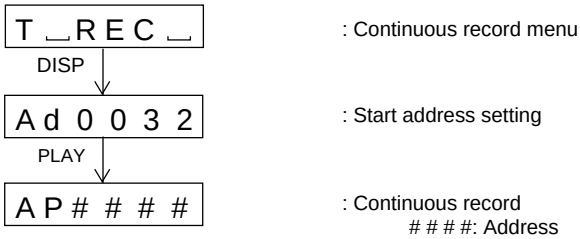
Continuous Record

Enter the EEPROM setting mode, and press the SKIP UP button.
Change the MSL setting value from 00 to 08 by using CTRL_ (control setting menu).
(If the MSL remains in 00, no signal is recorded.)

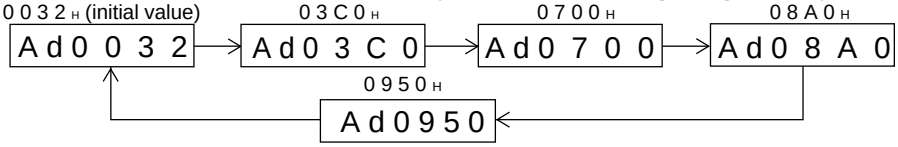
• Continuous record from the current pickup position



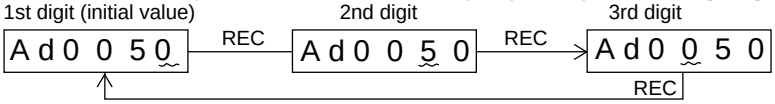
• Continuous record playback from any address



* When the [STOP] button is pressed in specific condition, the "TEST MODE STOP" state is set.
* In the start address set state the start address changes as follows when the [MENU] button is pressed.

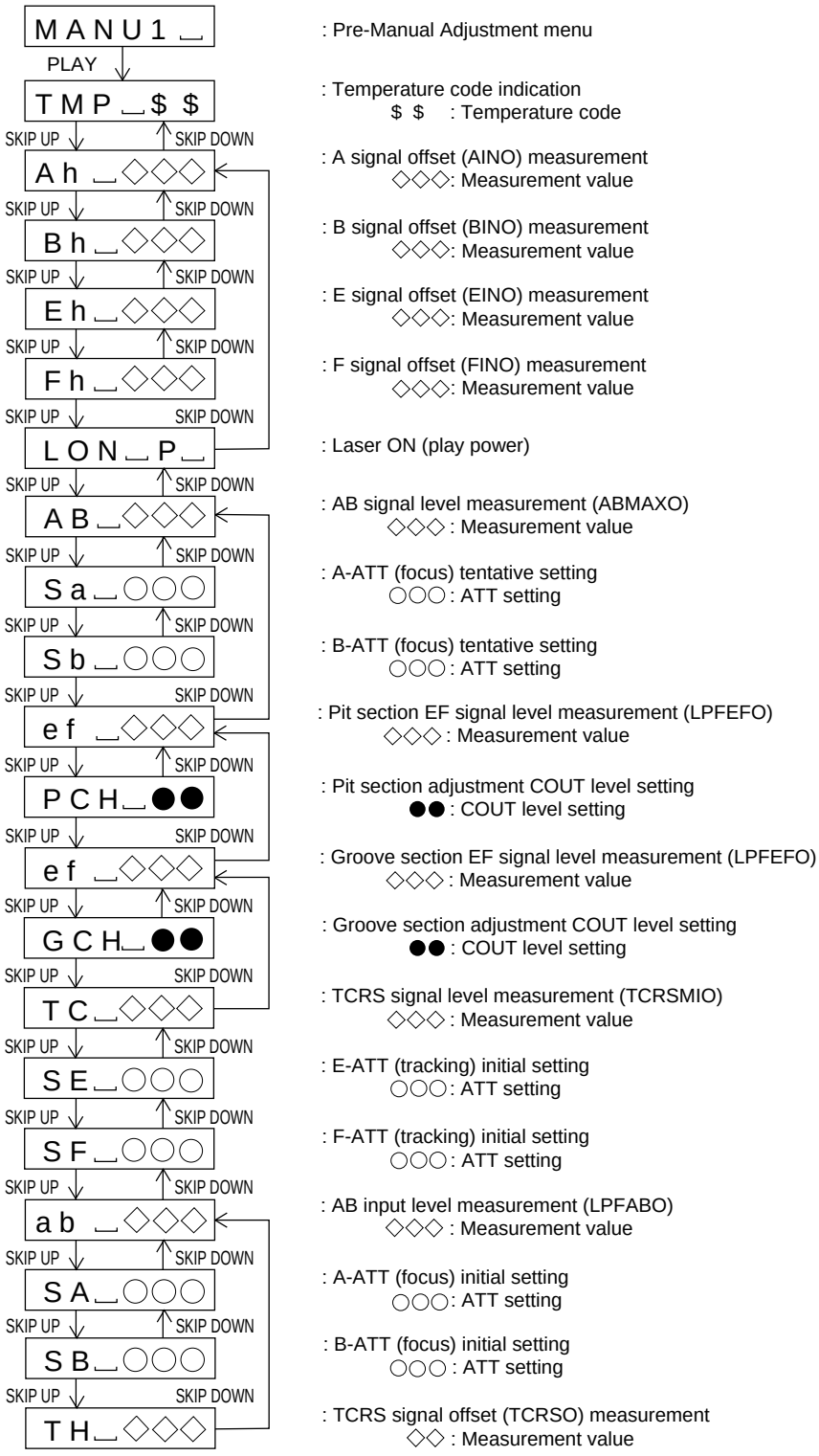


* In the start address setting state the start address change digit changes when the [REC] button is pressed.

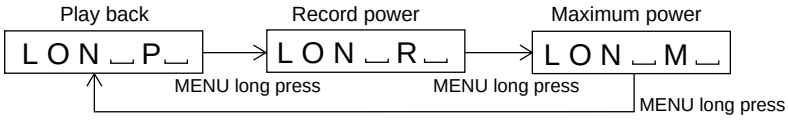


* In the start address set state the value of selection digit changes in the range of 0h to Fh when the [SKIP UP/DOWN] button is pressed.
* In the continuous record state and start address set state the record laser power changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed. (Initial value 0DH)

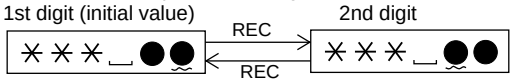
Servo Pre-Manual Adjustment


M A N U 1 ␣
PLAY
T M P ␣ $ $
: Temperature code indication
$ $: Temperature code
A h ␣ ◇◇◇
: A signal offset (AINO) measurement
◇◇◇: Measurement value
B h ␣ ◇◇◇
: B signal offset (BINO) measurement
◇◇◇: Measurement value
E h ␣ ◇◇◇
: E signal offset (EINO) measurement
◇◇◇: Measurement value
F h ␣ ◇◇◇
: F signal offset (FINO) measurement
◇◇◇: Measurement value
L O N ␣ P ␣
: Laser ON (play power)
A B ␣ ◇◇◇
: AB signal level measurement (ABMAXO)
◇◇◇ : Measurement value
S a ␣ ○○○
: A-ATT (focus) tentative setting
○○○ : ATT setting
S b ␣ ○○○
: B-ATT (focus) tentative setting
○○○ : ATT setting
e f ␣ ◇◇◇
: Pit section EF signal level measurement (LPFEFO)
◇◇◇ : Measurement value
P C H ␣ ●●
: Pit section adjustment COUT level setting
●● : COUT level setting
e f ␣ ◇◇◇
: Groove section EF signal level measurement (LPFEFO)
◇◇◇ : Measurement value
G C H ␣ ●●
: Groove section adjustment COUT level setting
●● : COUT level setting
T C ␣ ◇◇◇
: TCRS signal level measurement (TCRSMIO)
◇◇◇ : Measurement value
S E ␣ ○○○
: E-ATT (tracking) initial setting
○○○: ATT setting
S F ␣ ○○○
: F-ATT (tracking) initial setting
○○○: ATT setting
a b ␣ ◇◇◇
: AB input level measurement (LPFABO)
◇◇◇ : Measurement value
S A ␣ ○○○
: A-ATT (focus) initial setting
○○○: ATT setting
S B ␣ ○○○
: B-ATT (focus) initial setting
○○○ : ATT setting
T H ␣ ◇◇◇
: TCRS signal offset (TCRSO) measurement
◇◇ : Measurement value
SKIP UP
SKIP DOWN

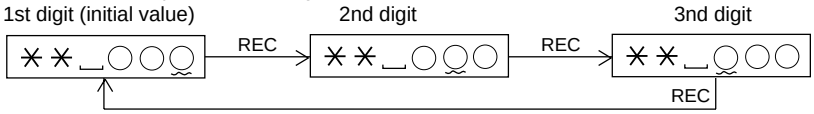
* When the [STOP] button is pressed in specific condition, the "TEST MODE STOP" state is set.
* When you press the [MENU] button with the laser ON (lid open), the laser power shifts as follows.



* In the specific setting display state the setting change digit changes when the [REC] button is pressed.
  • In the case of the setup value two digits.

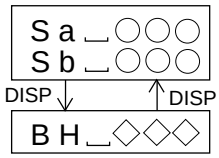


  • In the case of the setup value three digits.



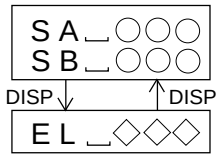
* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

* If the [DISP] button is pressed, the display changes as follows.
  • ABMAXO measurement value



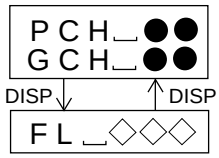
: A-ATT (focus) tentative setting
: B-ATT (focus) tentative setting
: ABMAXO measurement value indication
"REPEAT" Mark lighting

  • LPFABO measurement value



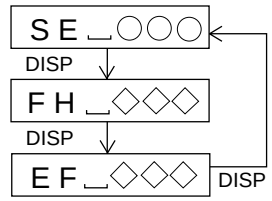
: A-ATT (focus) tentative setting
: B-ATT (focus) tentative setting
: LPFABO measurement value indication
"REPEAT" Mark lighting

  • LPFEFO measurement value



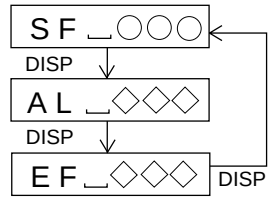
: Pit section adjustment COUT level setting
: Group section adjustment COUT level setting
: LPFEFO measurement value indication
"REPEAT" Mark lighting

  • LPFEINO/EFMIO measurement value



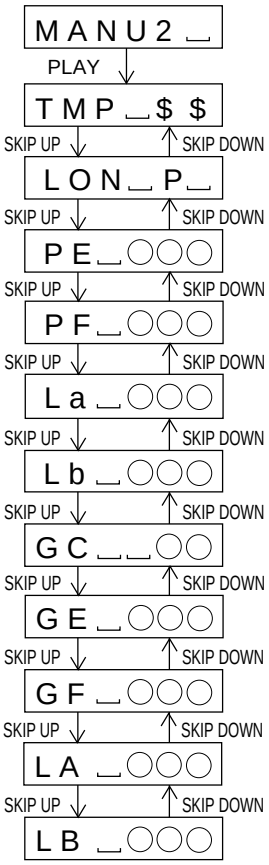
: E-ATT (tracking) initial setting
: LPFEINO measurement value indication
"REPEAT" Mark lighting
: EFMIO measurement value indication
"REPEAT", "1" Mark lighting

  • LPFFINO/EFMIO measurement value



: F-ATT (tracking) initial setting
: LPFFINO measurement value indication
"REPEAT" Mark lighting
: EFMIO measurement value indication
"REPEAT", "1" Mark lighting

Servo ATT Manual Adjustment



: ATT manual adjustment menu

: Temperature code indication
$ $: Temperature code

: Laser ON (play power)

: Pit section E-ATT (tracking) setting
○○○ : ATT setting

: Pit section F-ATT (tracking) setting
○○○ : ATT setting

: Low reflection A-ATT (focus) setting
○○○ : ATT setting

: Low reflection B-ATT (focus) setting
○○○ : ATT setting

: TCRS ATT setting
○○ : ATT setting

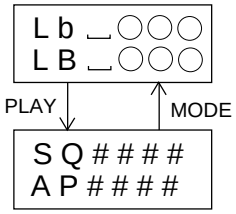
:Groove section E-ATT (tracking) setting
○○○ : ATT setting

:Groove section F-ATT (tracking) setting
○○○ : ATT setting

: Low reflection A-ATT (focus) setting
○○○ : ATT setting

: Low reflection B-ATT (focus) setting
○○○ : ATT setting

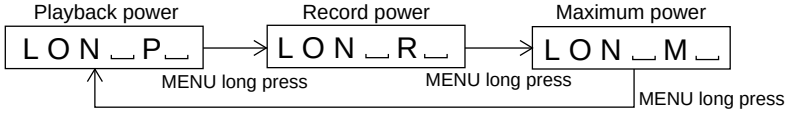
* When the [STOP] button is pressed in specific condition, the "TEST MODE STOP" state is set.
* If the [PLAY] button is pressed in the B-ATT setting state, the mode is changed to the continuous playback mode.
And if the [Remote Controller MODE] button is pressed in the continuous playback state, the mode is changed to the B-ATT setting state of the ATT manual adjustment.



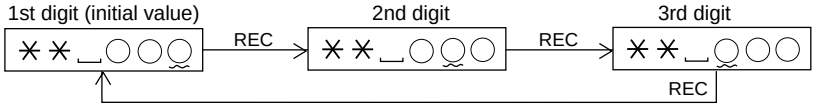
: Low-reflection pit section B-ATT (focus) setting
: Low-reflection groove section B-ATT (focus) setting
○○○ : ATT setting

: Continuous playback (pit section)
: Continuous playback (groove section)
: Address

* If the [MENU] button is pressed in the laser ON state (with no disc or the lid open), laser power changes as follows. (When operating with the main unit and remote control)



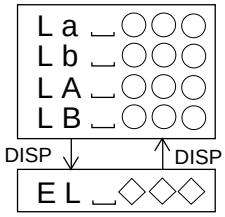
* In the specific setting display state the setting change digit changes when the [REC] button is pressed.



* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

* If the [DISP] button is pressed, the display changes as follows.

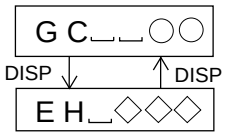
• LPFABO measurement value



: Low-reflection pit section A-ATT (focus) setting
: Low-reflection pit section B-ATT (focus) setting
: Low-reflection groove section A-ATT (focus) setting
: Low-reflection groove section B-ATT (focus) setting

: LPFABO measurement value indication
"REPEAT" Mark lighting

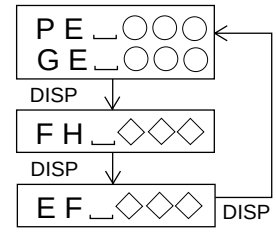
• TCRSMIO measurement value



: TCRS ATT setting

: TCRSMIO measurement value indication
"REPEAT" Mark lighting

• LPFEINO/EFMIO measurement value

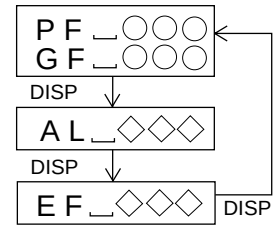


: Pit section E-ATT (tracking) setting
: Groove section E-ATT (tracking) setting

: LPFEINO measurement value indication
"REPEAT" Mark lighting

: EFMIO measurement value indication
"REPEAT", "1" Mark lighting

• LPFFINO/EFMIO measurement value

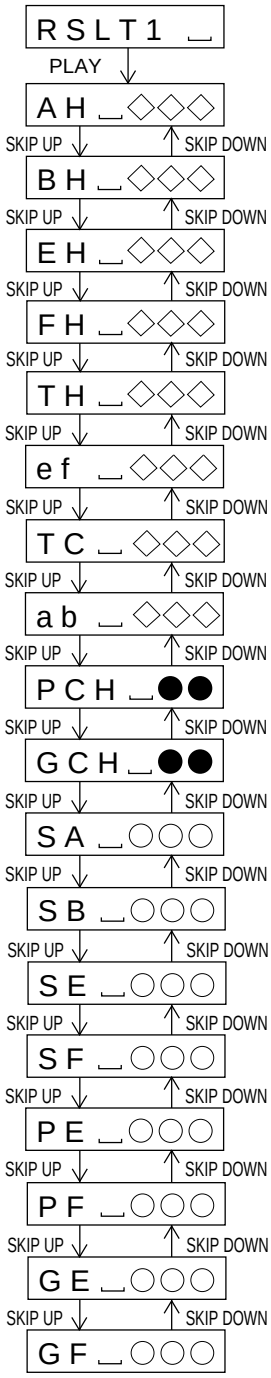


: Pit section F-ATT (tracking) setting
: Groove section F-ATT (tracking) setting

: LPFFINO measurement value indication
"REPEAT" Mark lighting

: EFMIO measurement value indication
"REPEAT", "1" Mark lighting

Servo Pre-adjustment Value Check



: Pre-adjustment Value Check menu

: A signal offset measurement value (setting)

: B signal offset measurement value (setting)

: E signal offset measurement value (setting)

: F signal offset measurement value (setting)

: TCRS signal offset measurement value (setting)

: EF signal measurement value

: TCRS signal measurement value

: AB signal input measurement value

: Pit section adjustment COUT level setting

: Groove section adjustment COUT level setting

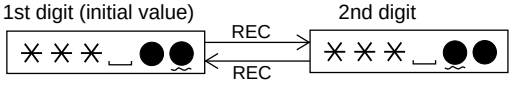
: A-ATT (focus) initial setting

: B-ATT (focus) initial setting

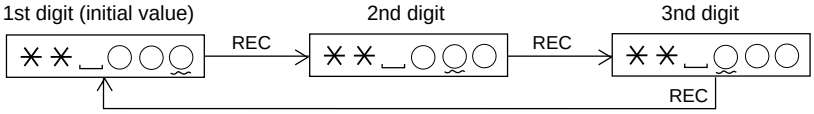
: E-ATT (tracking) initial setting

: F-ATT (tracking) initial setting

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* In the specific setting display state the setting change digit changes when the [REC] button is pressed.
  • In the case of the setup value two digits

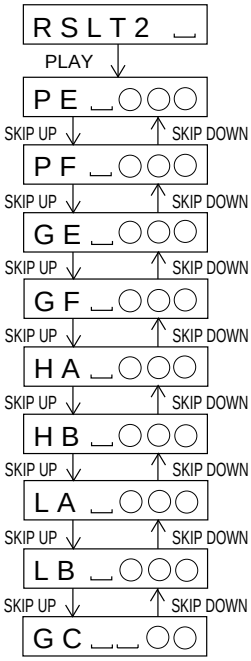


  • In the case of the setup value three digits



* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

ATT Setting Check



: ATT Setting Check menu

: Pit section E-ATT (tracking) setting

: Pit section F-ATT (tracking) setting

: Groove section E-ATT (tracking) setting

: Groove section F-ATT (tracking) setting

: High-reflection A-ATT (focus) setting

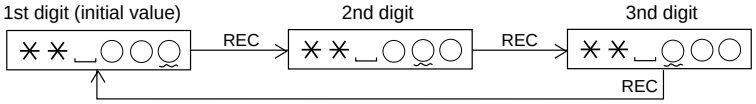
: High-reflection B-ATT (focus) setting

: Low-reflection A-ATT (focus) setting

: Low-reflection B-ATT (focus) setting

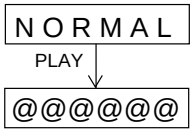
: TCRS-ATT setting

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* In the specific setting display state the setting change digit changes when the [REC] button is pressed.
  • In the case of the setup value three digits.



* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

Test Mode Normal Playback



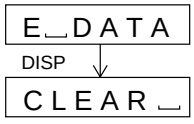
: Test mode normal playback menu

: Normal playback mode
@@@@@@: Mode and address indication

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

Error History Display

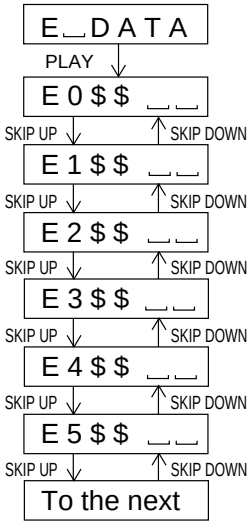
• Error history clear



: Error history indication menu

: Error history clear

• Error history indication



: Error history indication menu

: Error history 0 indication
$ $: Error code

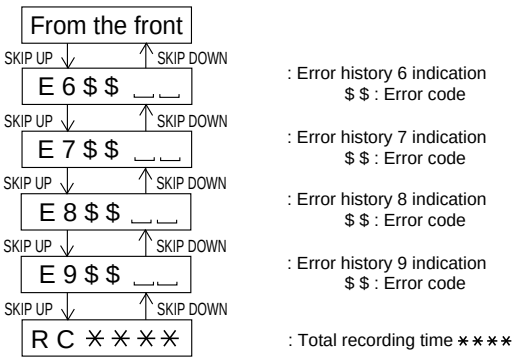
: Error history 1 indication
$ $: Error code

: Error history 2 indication
$ $: Error code

: Error history 3 indication
$ $: Error code

: Error history 4 indication
$ $: Error code

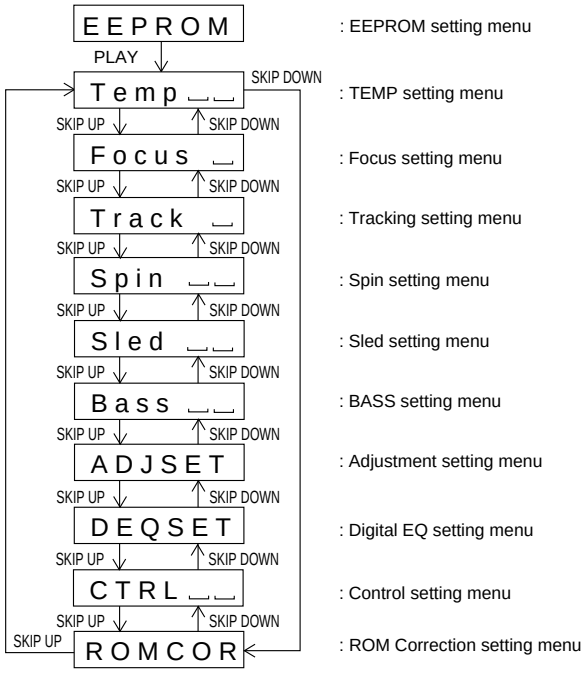
: Error history 5 indication
$ $: Error code


From the front
SKIP UP
SKIP DOWN
E 6 $ $ ⎵ ⎵
: Error history 6 indication
$ $: Error code
E 7 $ $ ⎵ ⎵
: Error history 7 indication
$ $: Error code
E 8 $ $ ⎵ ⎵
: Error history 8 indication
$ $: Error code
E 9 $ $ ⎵ ⎵
: Error history 9 indication
$ $: Error code
R C ✳ ✳ ✳ ✳
: Total recording time ✳✳✳✳

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

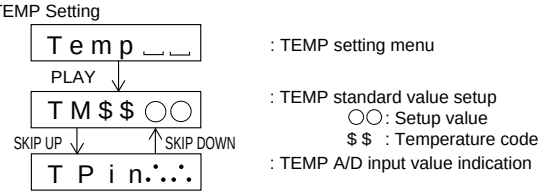
EEPROM Setting

• Menu transition

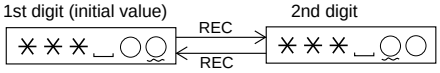

E E P R O M
: EEPROM setting menu
PLAY
SKIP DOWN
T e m p ⎵ ⎵
: TEMP setting menu
SKIP UP
SKIP DOWN
F o c u s ⎵
: Focus setting menu
T r a c k ⎵
: Tracking setting menu
S p i n ⎵ ⎵
: Spin setting menu
S l e d ⎵ ⎵
: Sled setting menu
B a s s ⎵ ⎵
: BASS setting menu
A D J S E T
: Adjustment setting menu
D E Q S E T
: Digital EQ setting menu
C T R L ⎵ ⎵
: Control setting menu
R O M C O R
: ROM Correction setting menu

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

• TEMP Setting

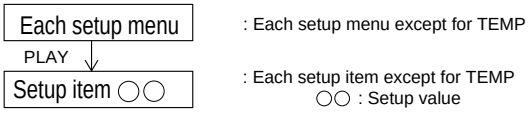

T e m p ⎵ ⎵
: TEMP setting menu
PLAY
T M $ $ ○○
: TEMP standard value setup
○○: Setup value
$ $: Temperature code
SKIP UP
SKIP DOWN
T P i n ∴∴
: TEMP A/D input value indication

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* When the [DISP] button operation is performed in the specific state, the menu changes to "TEMP SETTING menu".
* When the [REC] button is pressed in each state, the set digit is changed.

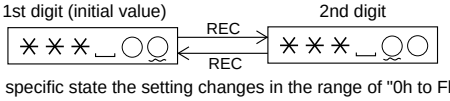


* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

• Setup except for TEMP



* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* When the [DISP] button operation is performed in the specific state, the menu changes to "TEMP SETTING menu".
* In the specific setting display state the setting change digit changes when the [REC] button is pressed.



* In the specific state the setting changes in the range of "0h to Fh" when the [VOLUME +/-] button is pressed.

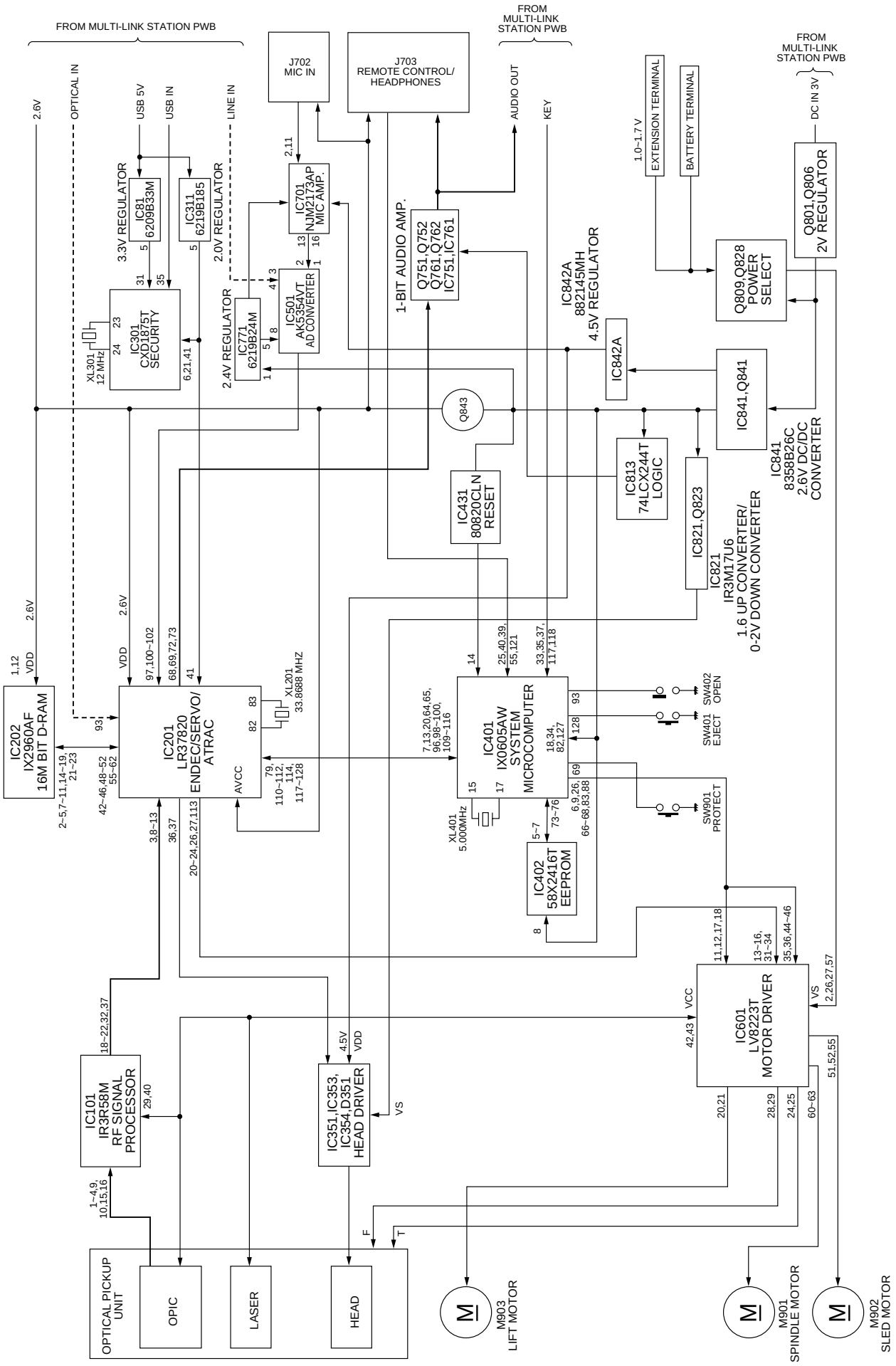


Figure 31 BLOCK DIAGRAM (1/2)

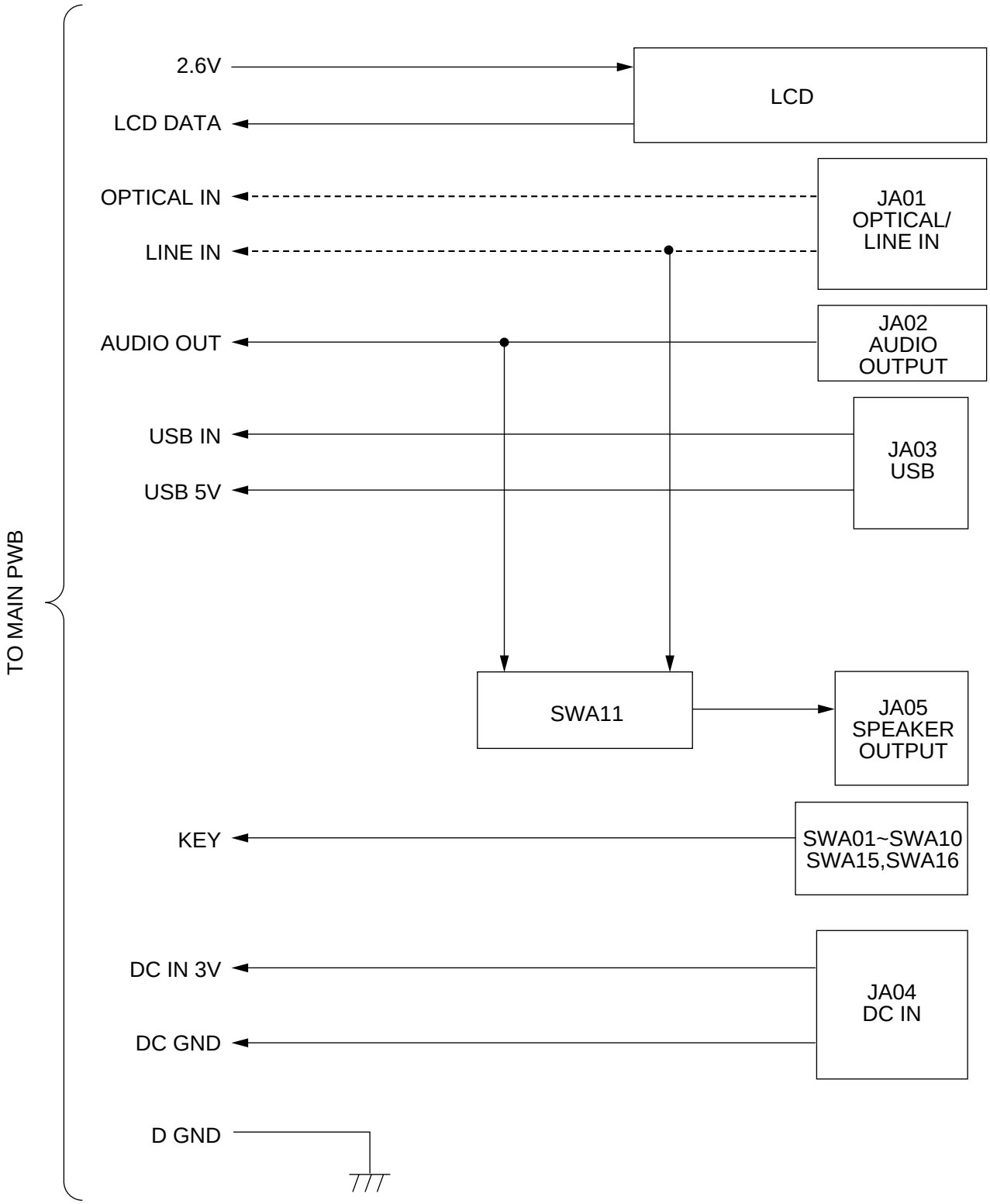


Figure 32 BLOCK DIAGRAM (2/2)

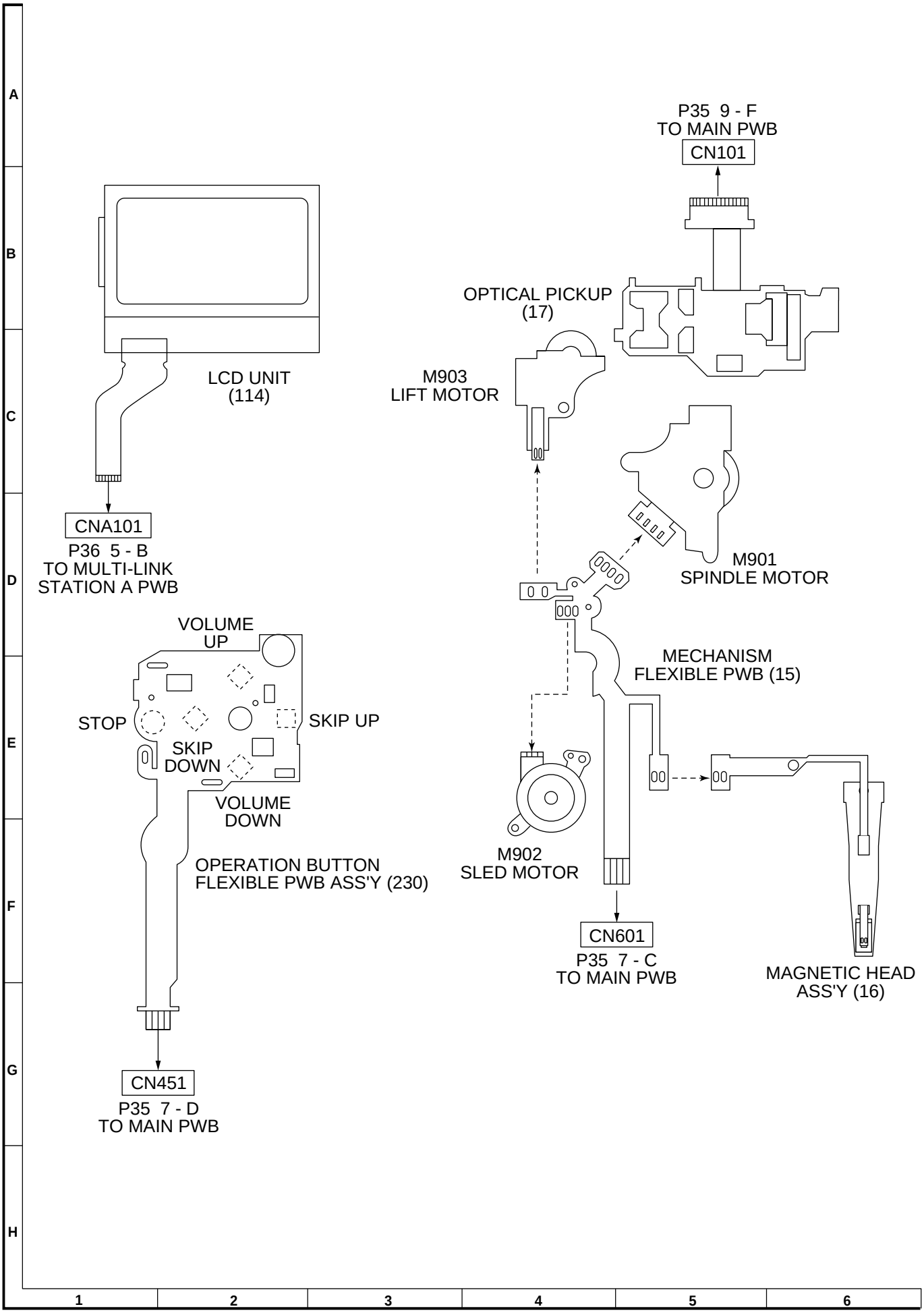


Figure 33 WIRING SIDE OF P.W.BOARD (1/5)

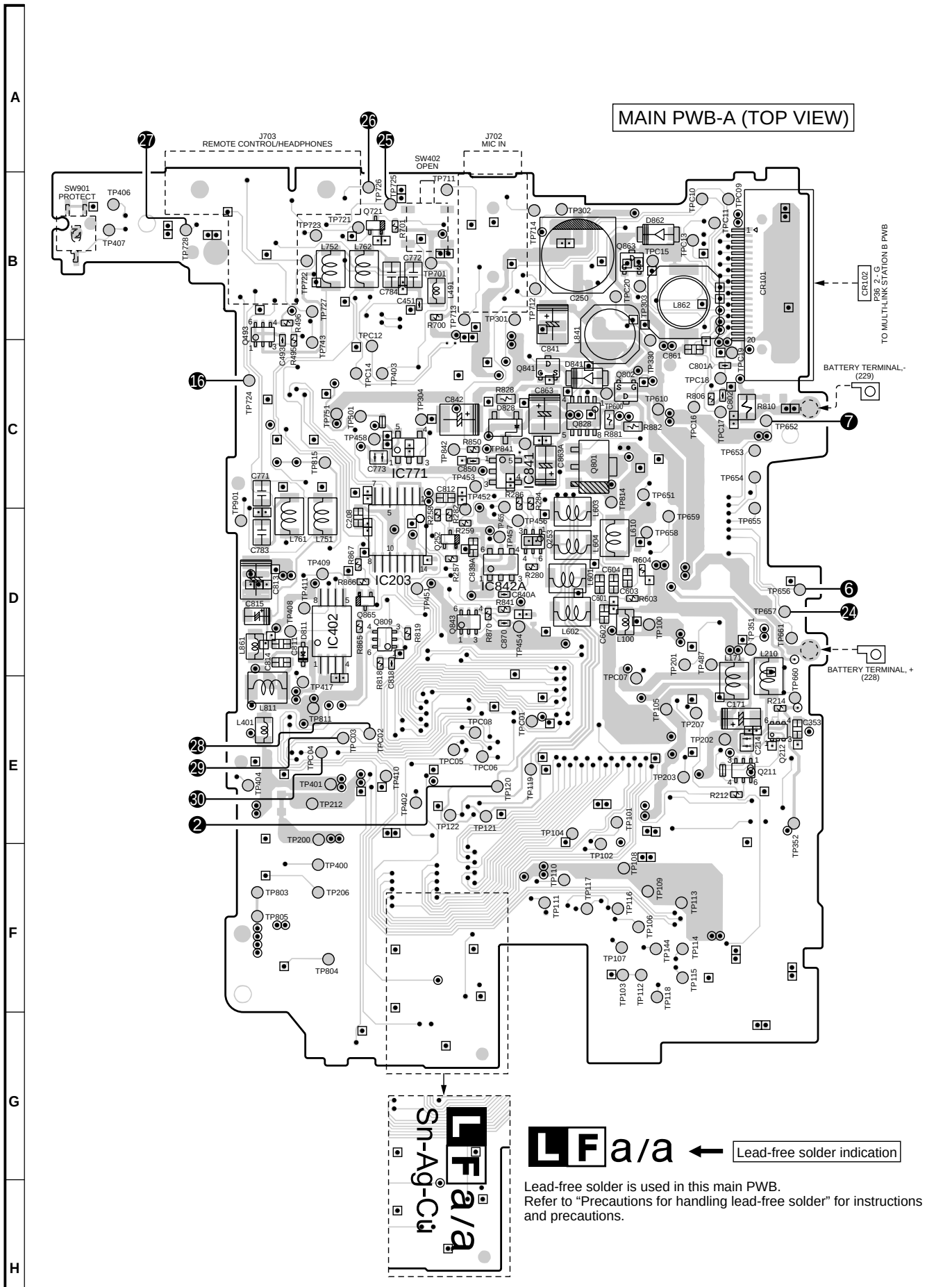
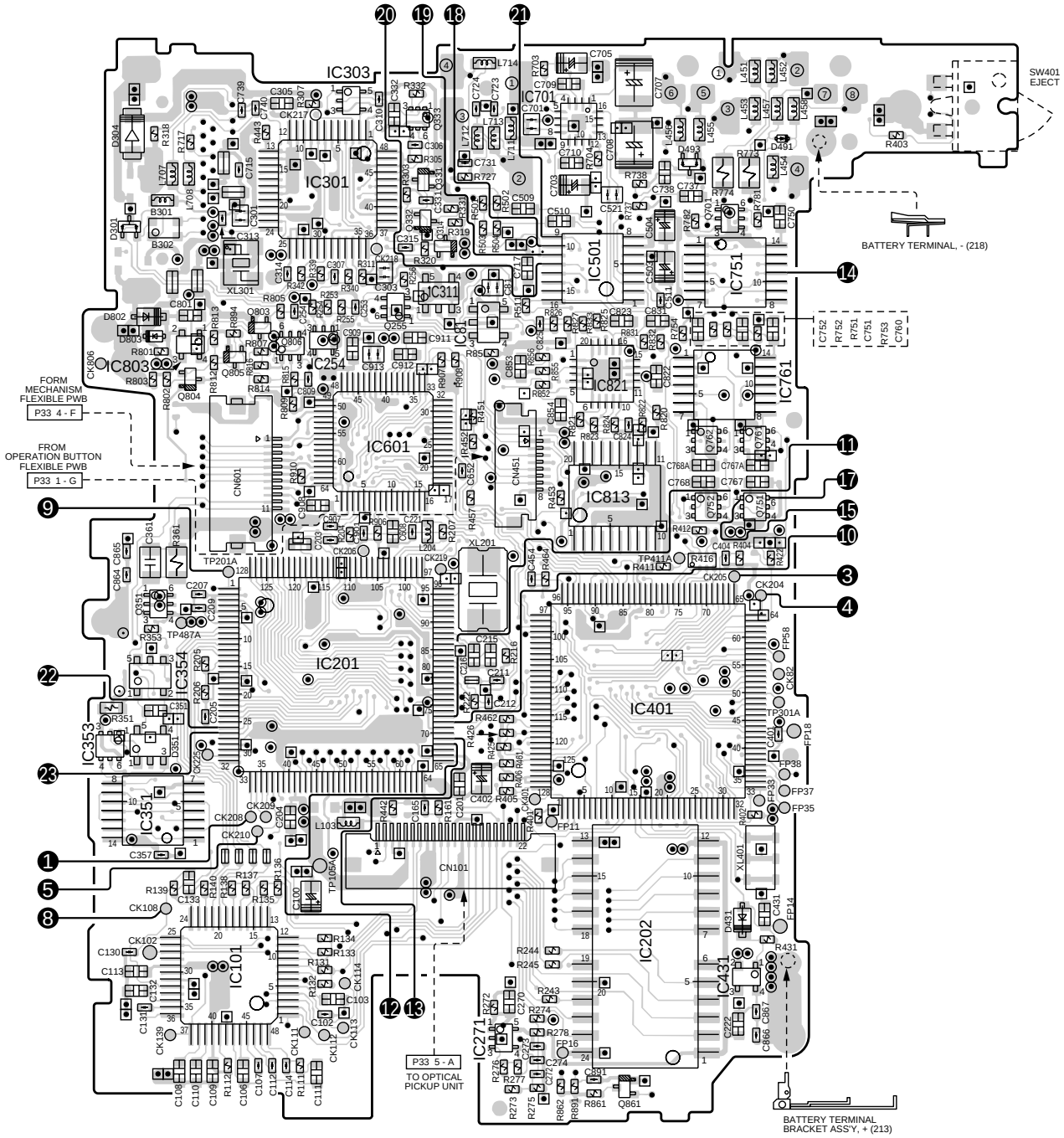


Figure 34 WIRING SIDE OF P.W.BOARD (2/5)

◉ : Through-hole where the top, bottom and +B patterns are connected.
▣ : Through-hole where the top, bottom and ground patterns are connected.
● : Through-hole where the top and bottom patterns are connected.

MAIN PWB-A (BOTTOM VIEW)



7	8	9	10	11	12

Figure 35 WIRING SIDE OF P.W.BOARD (3/5)

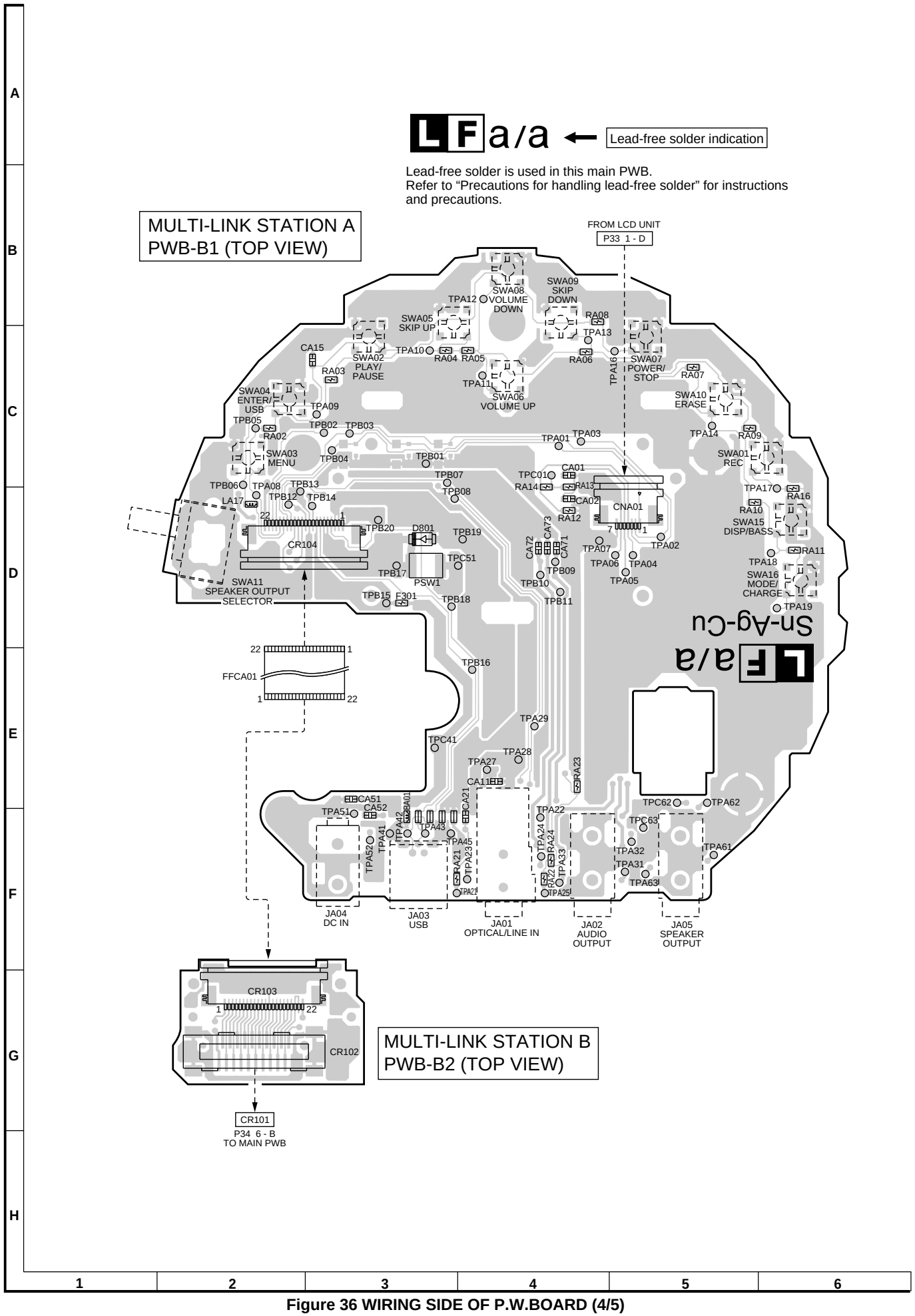
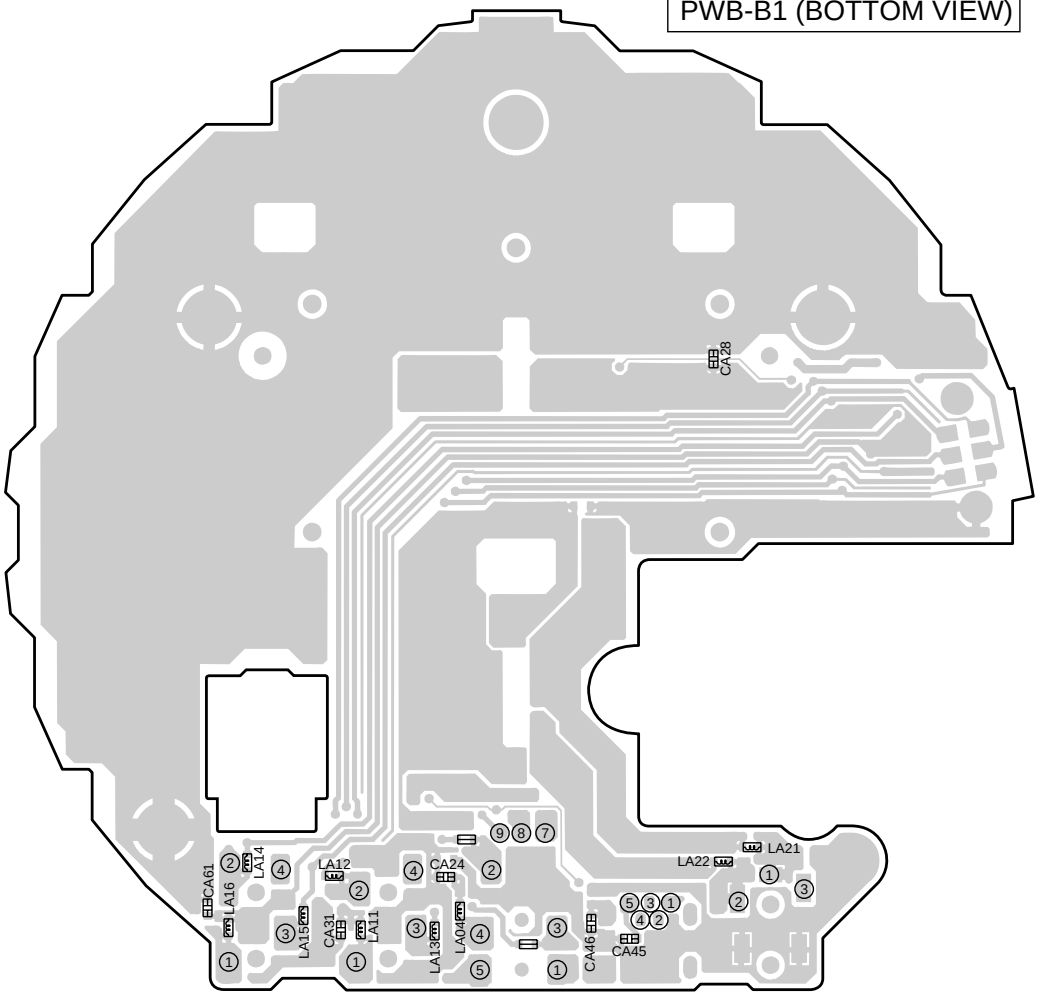
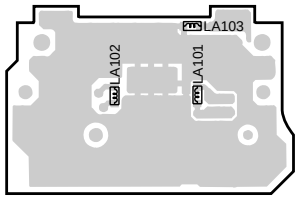


Figure 36 WIRING SIDE OF P.W.BOARD (4/5)

MULTI-LINK STATION A
PWB-B1 (BOTTOM VIEW)

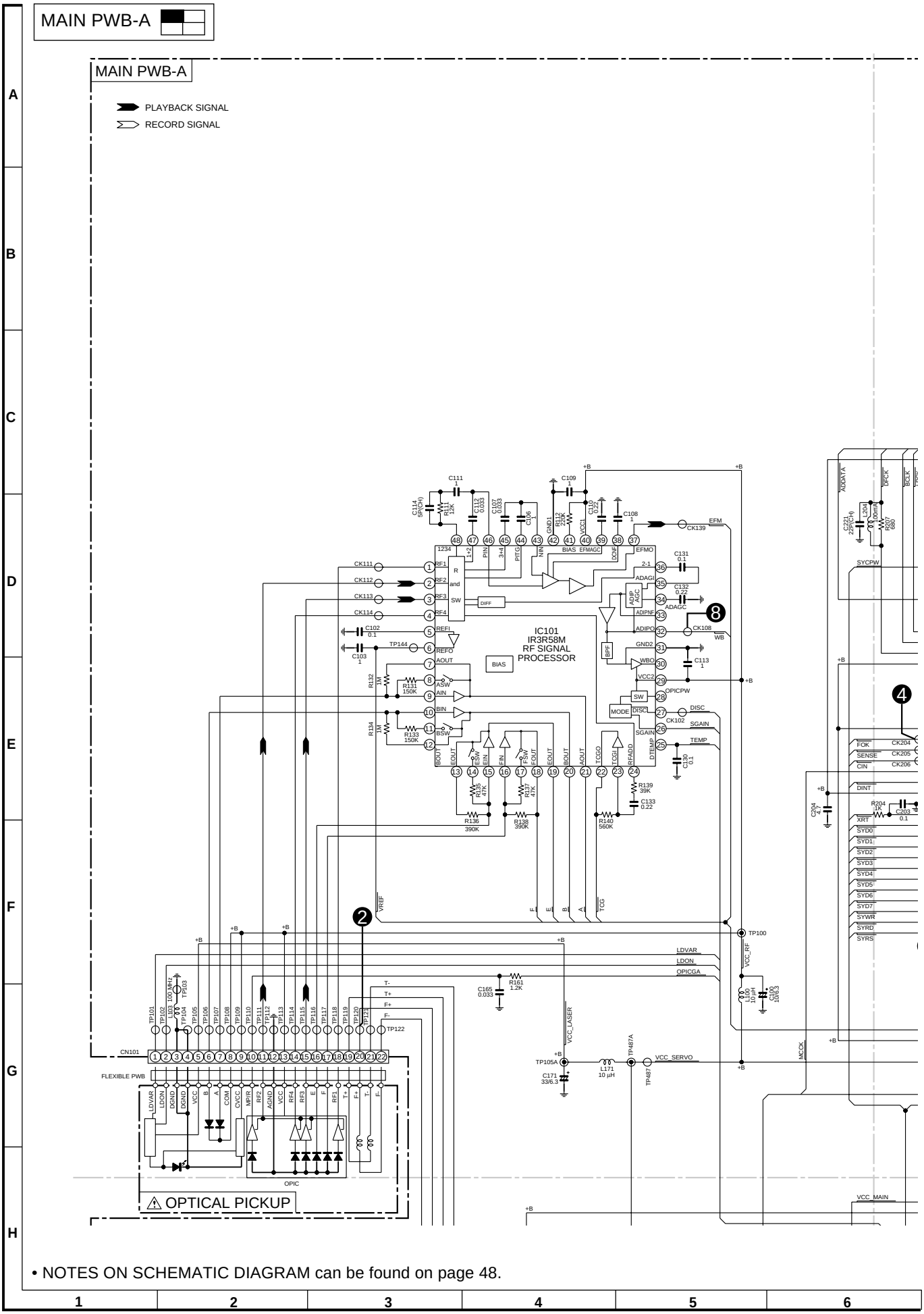


MULTI-LINK STATION B
PWB-B2 (BOTTOM VIEW)



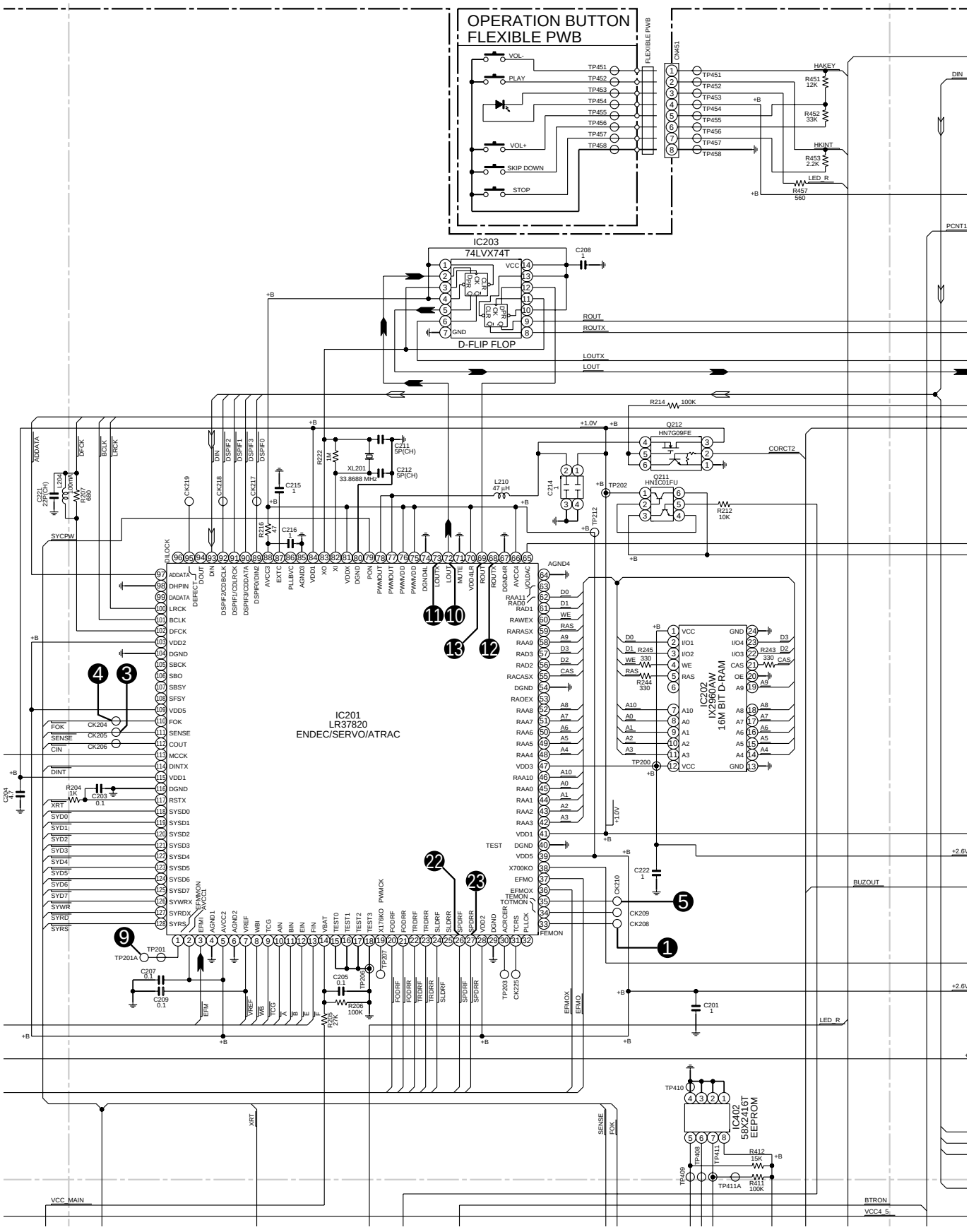
7	8	9	10	11	12

Figure 37 WIRING SIDE OF P.W.BOARD (5/5)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 48.

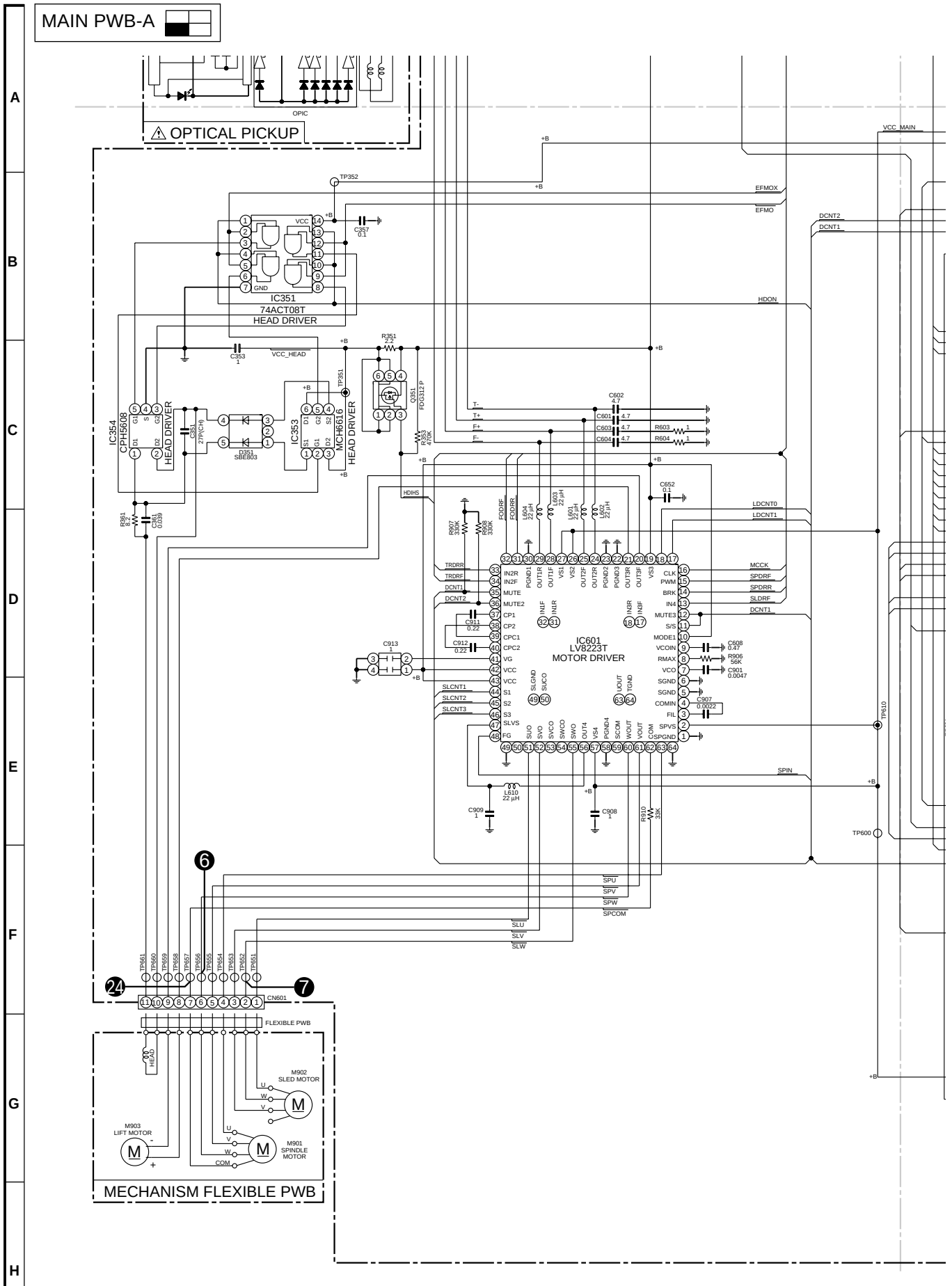
Figure 38 SCHEMATIC DIAGRAM (1/9)



• The numbers ❶ to ❺ , ❽ to ⓭ , ㉒ , ㉓ are waveform numbers shown in page 49, 50.

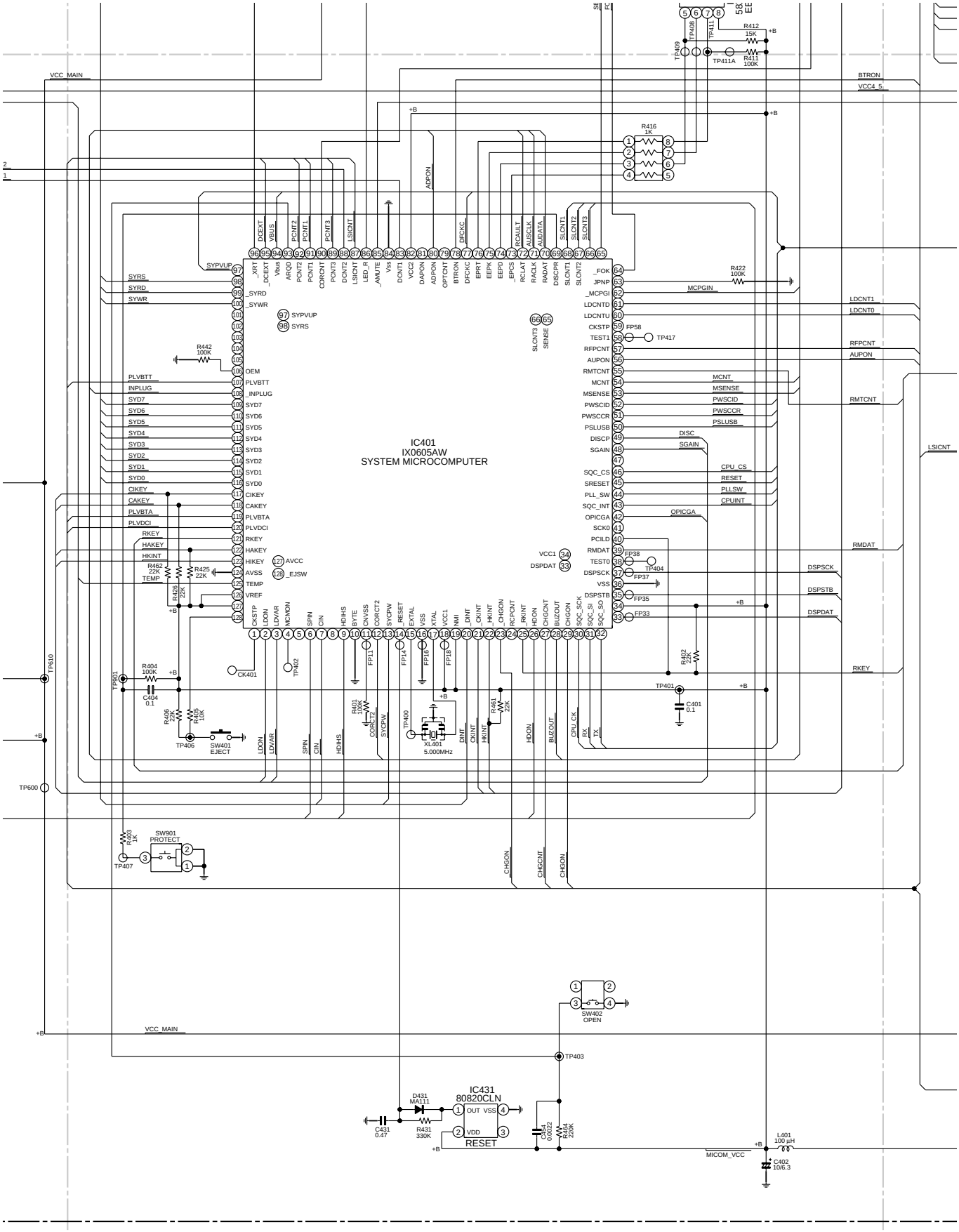
7	8	9	10	11	12

Figure 39 SCHEMATIC DIAGRAM (2/9)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 48.

Figure 40 SCHEMATIC DIAGRAM (3/9)

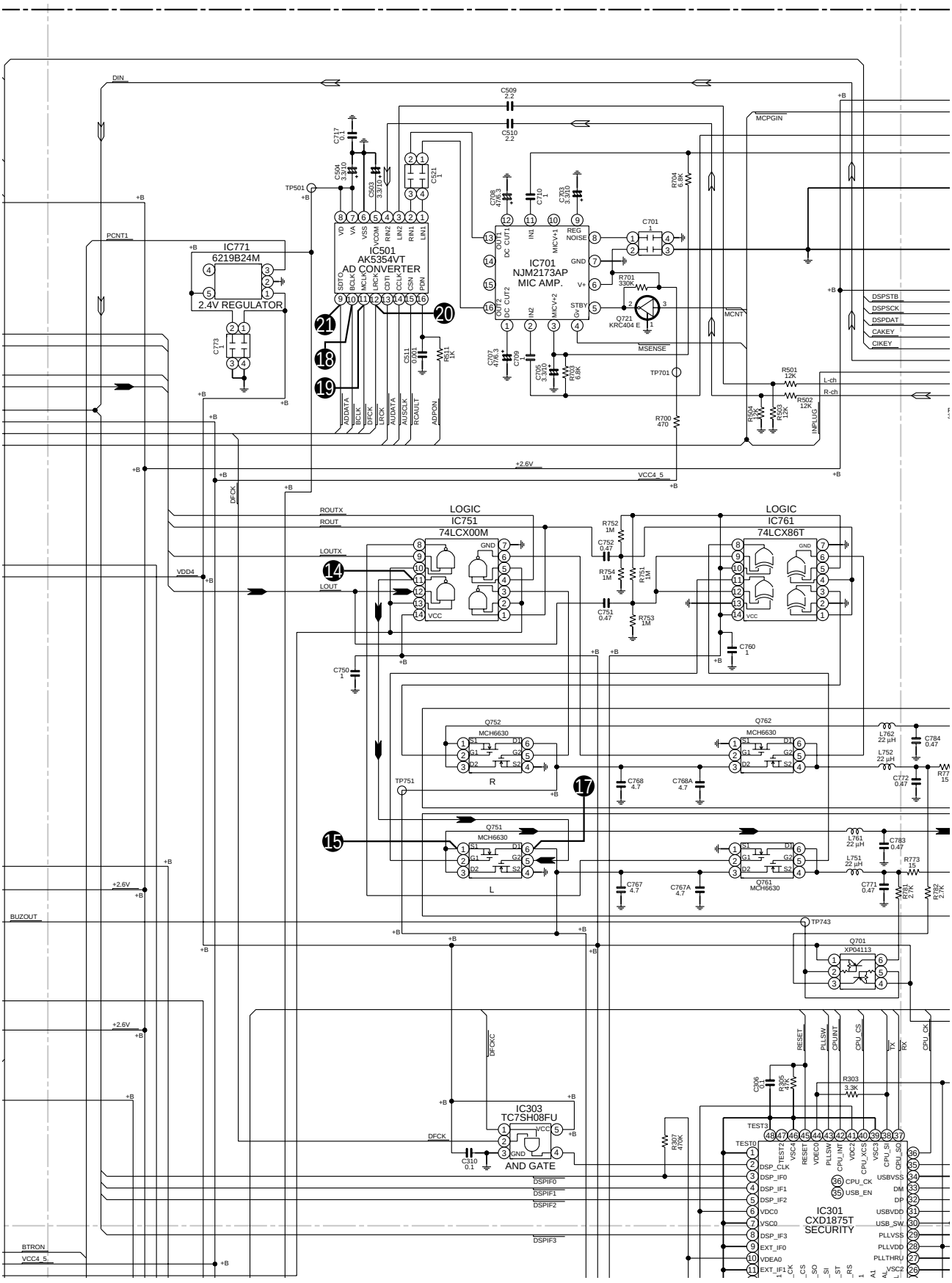


• The numbers ❻, ❼, ㉔, ㉘ to ㉚, are waveform numbers shown in page 49, 50.

7	8	9	10	11	12

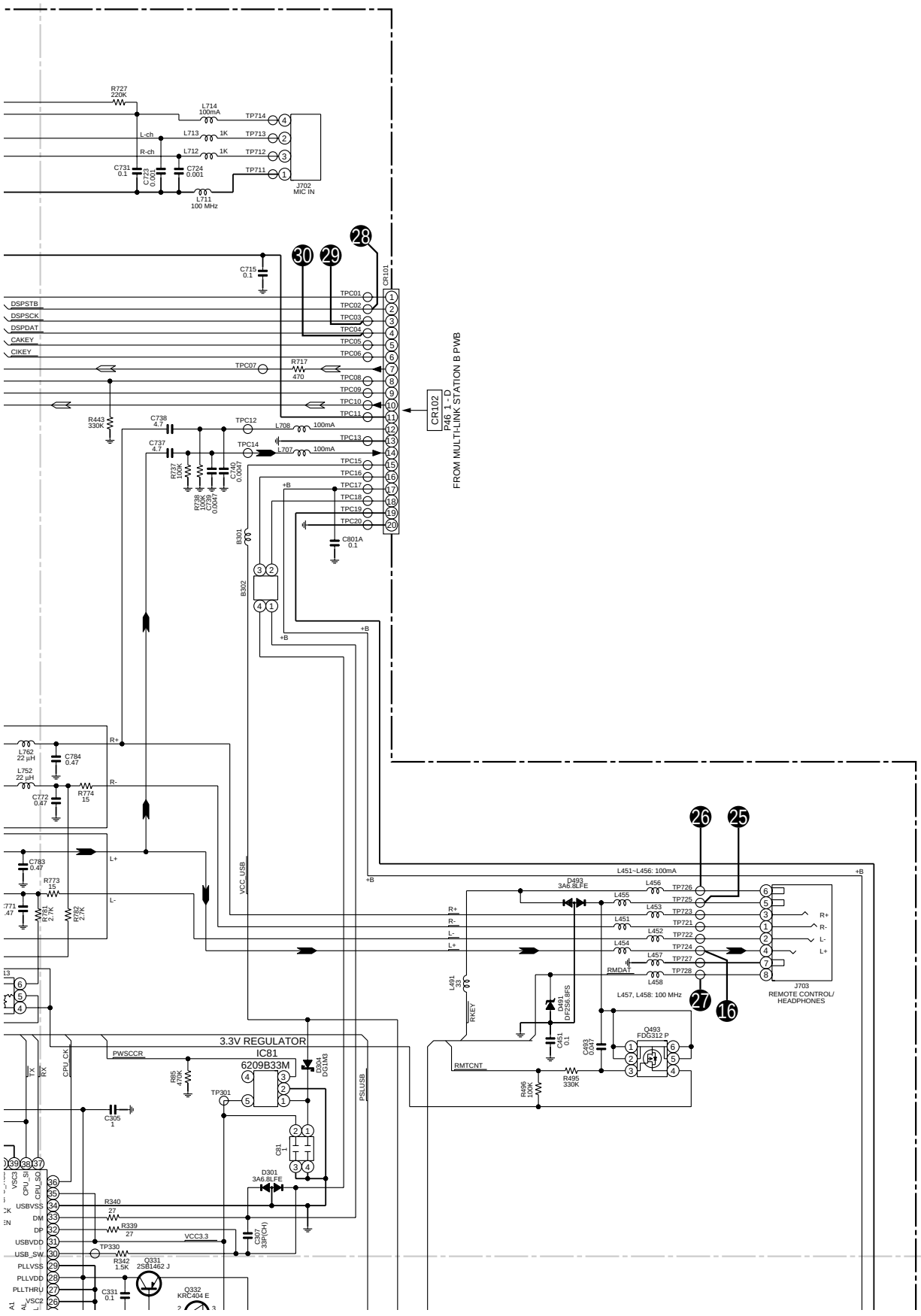
Figure 41 SCHEMATIC DIAGRAM (4/9)

MAIN PWB-A



• NOTES ON SCHEMATIC DIAGRAM can be found on page 48.

Figure 42 SCHEMATIC DIAGRAM (5/9)

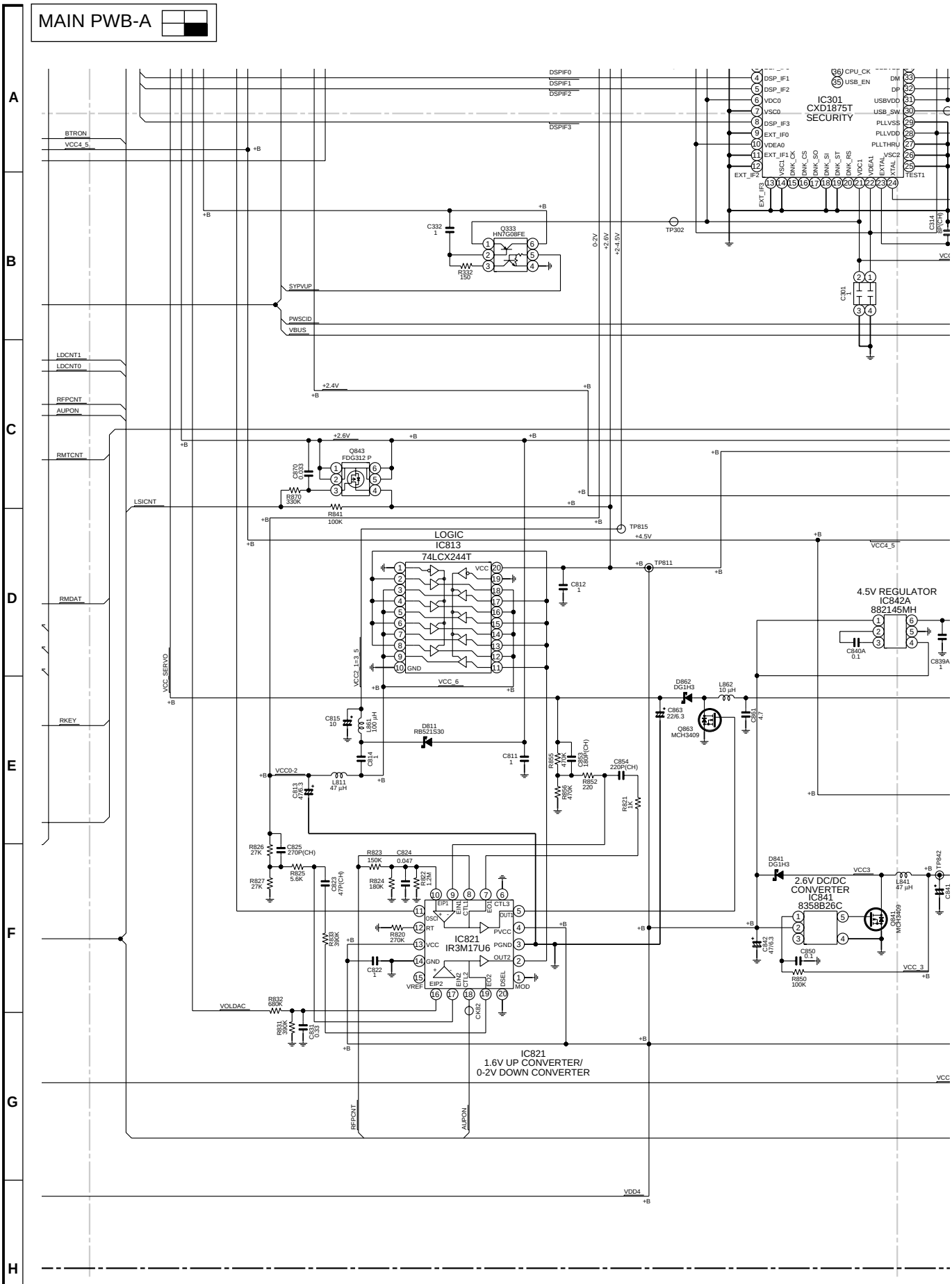


• The numbers 14, 17 to 21, 25 to 27 are waveform numbers shown in page 49, 50.

7	8	9	10	11	12

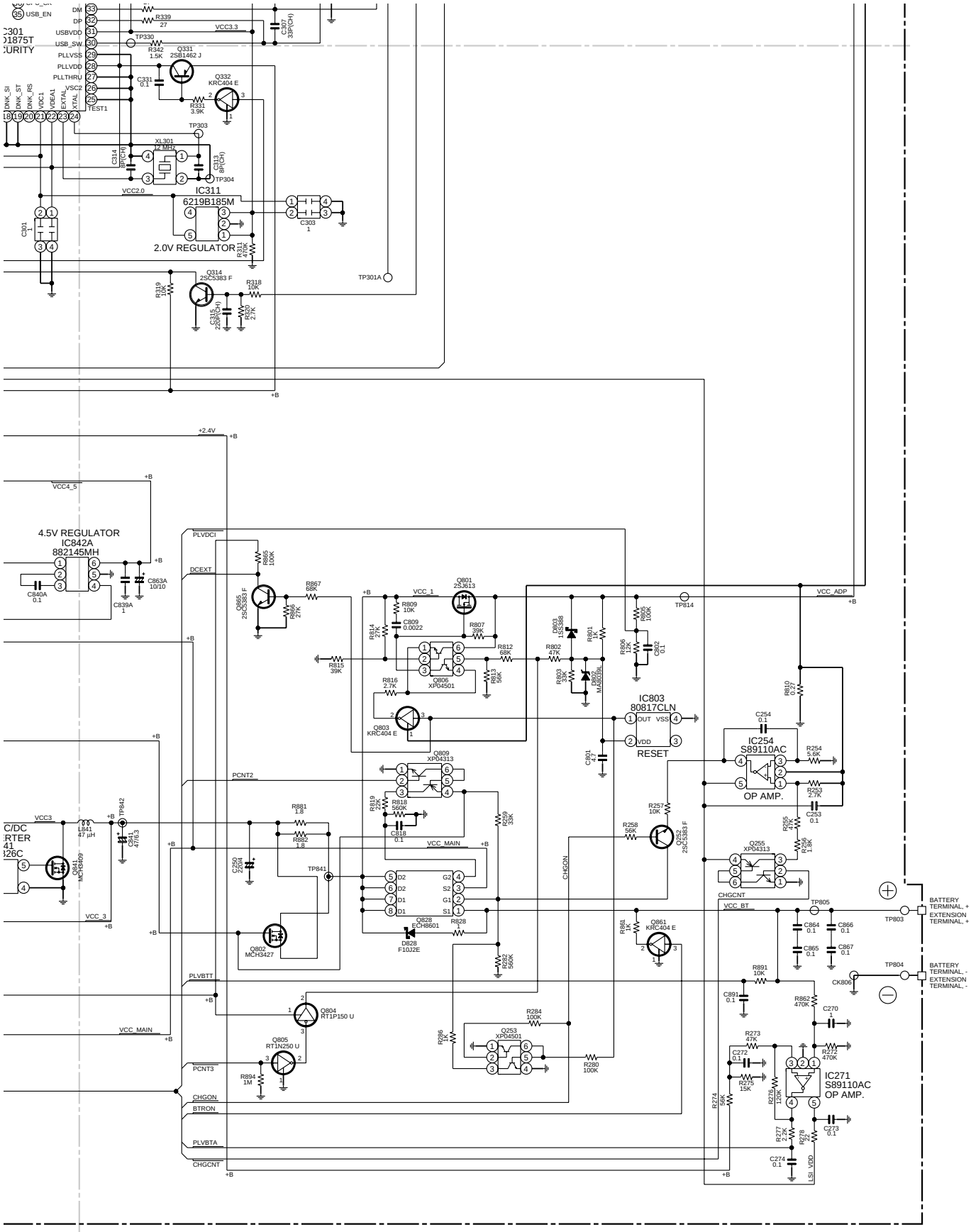
Figure 43 SCHEMATIC DIAGRAM (6/9)

MAIN PWB-A



• NOTES ON SCHEMATIC DIAGRAM can be found on page 48.

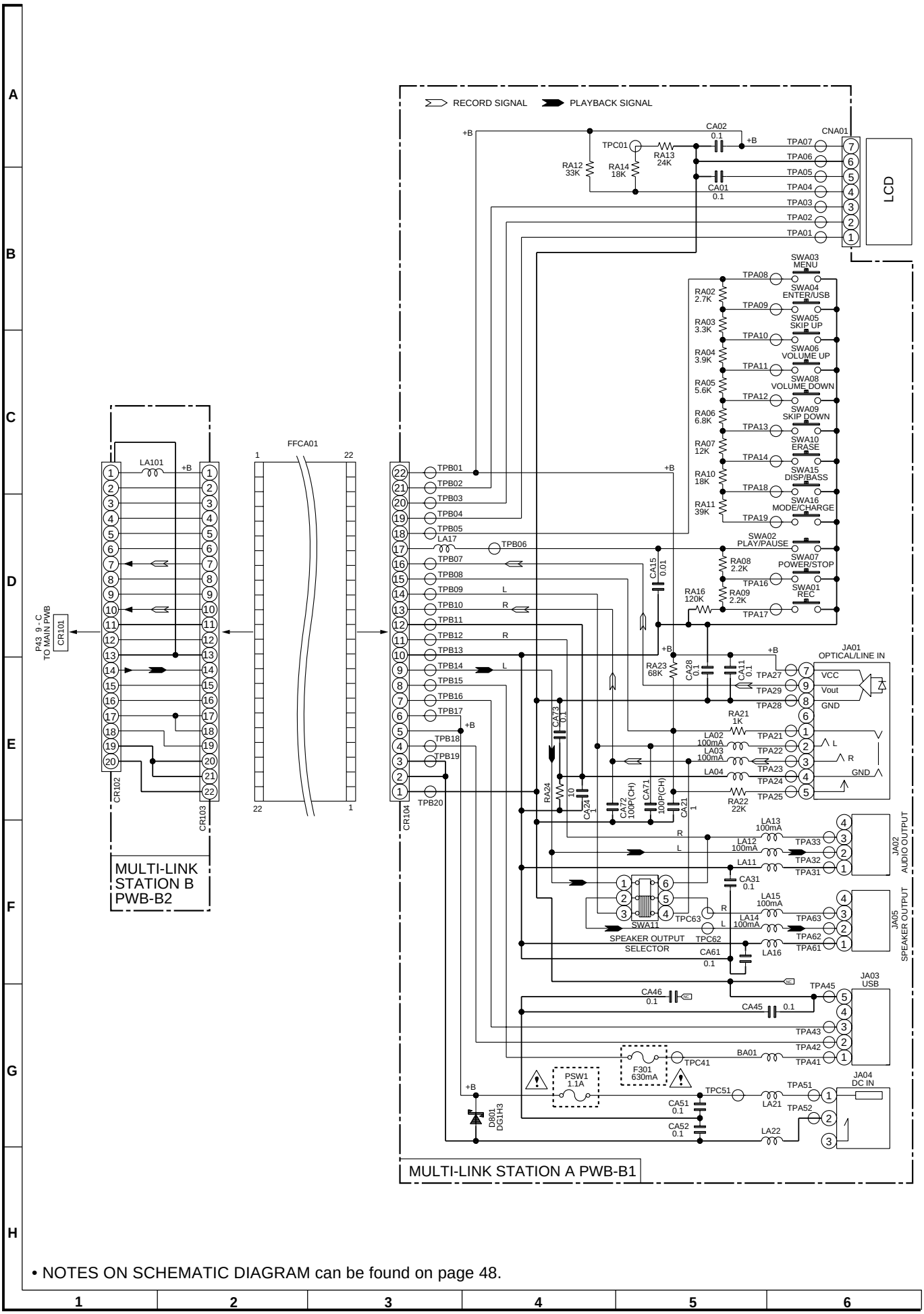
Figure 44 SCHEMATIC DIAGRAM (7/9)



• The numbers 15 to 17, 27 are waveform numbers shown in page 49, 50.

7	8	9	10	11	12

Figure 45 SCHEMATIC DIAGRAM (8/9)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 48.

Figure 46 SCHEMATIC DIAGRAM (9/9)

VOLTAGE

(TEST mode: "TEST" on the LCD display)
'P' in the VOLTAGE column indicates pulse signals.

IC101

PIN NO.	VOLTAGE
1	0.73 V
2	0.73 V
3	0.73 V
4	0.72 V
5	1.33 V
6	1.34 V
7	1.34 V
8	1.29 V
9	1.34 V
10	1.34 V
11	1.3 V
12	1.34 V
13	1.4 V
14	1.33 V
15	1.4 V
16	1.34 V
17	1.33 V
18	1.34 V
19	1.4 V
20	1.34 V
21	1.34 V
22	1.34 V
23	1.34 V
24	0.72 V
25	1.49 V
26	2.6 V
27	2.6 V
28	2.66 V
29	2.66 V
30	2.2 V
31	0 V
32	1.34 V
33	1.34 V
34	0 V
35	1.33 V
36	1.34 V
37	1.34 V
38	1.34 V
39	0 V
40	2.66 V
41	1.53 V
42	0 V
43	1.33 V
44	0 V
45	0 V
46	1.33 V
47	0 V
48	0.72 V

IC202

PIN NO.	VOLTAGE
1	2.62 V
2	0 V
3	0 V
4	2.62 V
5	2.58 V
6	0 V
7	2.62 V
8	2.62 V
9	2.62 V
10	2.62 V
11	2.62 V
12	2.62 V
13	0 V
14	0 V
15	0 V
16	2.62 V
17	0 V
18	2.62 V
19	0 V
20	0 V
21	2.57 V
22	0 V
23	0 V
24	0 V

IC203

PIN NO.	VOLTAGE
1	2.6 V
2	P
3	P
4	2.6 V
5	P
6	P
7	0 V
8	P
9	P
10	2.6 V
11	P
12	P
13	2.6 V
14	2.6 V

IC81

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	0 V
4	0 V
5	0 V

IC201

PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	1.4 V	65	0 V
2	2.6 V	66	2.62 V
3	1.4 V	67	0 V
4	0 V	68	P
5	0.8 V	69	P
6	0 V	70	2.62 V
7	0 V	71	0 V
8	0 V	72	P
9	0 V	73	P
10	0 V	74	0 V
11	0 V	75	2.62 V
12	0 V	76	2.62 V
13	0 V	77	1.13 V
14	0 V	78	1.13 V
15	0 V	79	2.6 V
16	0 V	80	0 V
17	0 V	81	2.61 V
18	0 V	82	1.22 V
19	P	83	1.11 V
20	0 V	84	2.27 V
21	0 V	85	0 V
22	0 V	86	1.18 V
23	0 V	87	1.45 V
24	0 V	88	2.58 V
25	200 mV	89	0 V
26	0 V	90	0 V
27	0 V	91	200 mV
28	0 V	92	100 mV
29	0 V	93	—
30	P	94	P
31	200 mV	95	200 mV
32	P	96	2.62 V
33	1.3 V	97	0 V
34	1.3 V	98	0 V
35	1.3 V	99	0 V
36	P	100	P
37	P	101	P
38	P	102	P
39	2.61 V	103	2.61 V
40	0 V	104	0 V
41	1.1 V	105	0 V
42	2.62 V	106	0 V
43	2.62 V	107	2.54 V
44	2.62 V	108	2.54 V
45	2.62 V	109	2.6 V
46	2.62 V	110	0 V
47	2.62 V	111	0 V
48	0 V	112	0 V
49	0 V	113	1.9 V
50	2.62 V	114	2.54 V
51	0 V	115	400 mV
52	2.62 V	116	0 V
53	2.62 V	117	2.59 V
54	0 V	118	P
55	P	119	P
56	100 mV	120	P
57	200 mV	121	P
58	0 V	122	200 mV
59	P	123	P
60	2.62 V	124	P
61	100 mV	125	P
62	300 mV	126	P
63	0 V	127	P
64	0 V	128	P

IC254

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	0 V
4	0 V
5	0 V

IC271

PIN NO.	VOLTAGE
1	600 mV
2	0 V
3	600 mV
4	900 mV
5	2.6 V

IC311

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	0 V
4	0 V
5	0 V

IC353

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	0 V
4	200 mV
5	0 V
6	0 V

IC351

PIN NO.	VOLTAGE
1	0 V
2	P
3	0 V
4	0 V
5	P
6	0 V
7	0 V
8	0 V
9	P
10	0 V
11	0 V
12	P
13	0 V
14	4.5 V

IC354

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	0 V
4	0 V
5	0 V

IC402

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	0 V
4	0 V
5	2.62 V
6	0 V
7	2.62 V
8	2.62 V

IC301

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	0 V
4	0 V
5	0 V
6	0 V
7	0 V
8	0 V
9	0 V
10	0 V
11	0 V
12	0 V
13	0 V
14	0 V
15	0 V
16	0 V
17	0 V
18	0 V
19	0 V
20	0 V
21	0 V
22	0 V
23	0 V
24	0 V
25	0 V
26	0 V
27	0 V
28	0 V
29	0V
30	0 V
31	0 V
32	200 mV
33	0 V
34	0 V
35	0 V
36	0 V
37	0 V
38	0 V
39	0 V
40	0 V
41	0 V
42	0 V
43	0 V
44	0 V
45	0 V
46	0 V
47	0 V
48	0 V

IC501

PIN NO.	VOLTAGE
1	100 mV
2	200 mV
3	200 mV
4	100 mV
5	0 V
6	0 V
7	0 V
8	0 V
9	200 mV
10	200 mV
11	300 mV
12	300 mV
13	0 V
14	0 V
15	0 V
16	0 V

IC701

PIN NO.	VOLTAGE
1	1.11 V
2	0 V
3	0 V
4	0 V
5	4.36 V
6	4.5 V
7	0 V
8	0 V
9	0 V
10	0 V
11	0 V
12	100 mV
13	100 mV
14	200 mV
15	1.2 V
16	1.2 V

IC771

PIN NO.	VOLTAGE
1	2.6 V
2	0 V
3	2.58 V
4	0 V
5	2.41 V

IC401

PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	P	65	0 V
2	0.83 V	66	0 V
3	0.97 V	67	3.1 V
4	0.77 V	68	3.1 V
5	0.72 V	69	2.56 V
6	2.64 V	70	2.58 V
7	0.5 V	71	0 V
8	0.66 V	72	2.58 V
9	1.08 V	73	2.58 V
10	0 V	74	2.58 V
11	0 V	75	0 V
12	0.6 V	76	2.58 V
13	2.58 V	77	0 V
14	2.59 V	78	0 V
15	2.6 V	79	0 V
16	0 V	80	0 V
17	300 V	81	0 V
18	2.6 V	82	2.58 V
19	2.6 V	83	2.57 V
20	0 V	84	0 V
21	2.6 V	85	0 V
22	2.6 V	86	2.58 V
23	0 V	87	0 V
24	0 V	88	0 V
25	2.2 V	89	2.58 V
26	0 V	90	0 V
27	0 V	91	2.58 V
28	2.6 V	92	2.58 V
29	0 V	93	0 V
30	0 V	94	2.6 V
31	0 V	95	2.6 V
32	0 V	96	2.58 V
33	0 V	97	0 V
34	2.6 V	98	0 V
35	0 V	99	2.58 V
36	0 V	100	2.58 V
37	0 V	101	0 V
38	2.6 V	102	0 V
39	0 V	103	0 V
40	2.2 V	104	0 V
41	0 V	105	0 V
42	0 V	106	200 mV
43	0 V	107	1.28 V
44	0 V	108	300 mV
45	0 V	109	—
46	0 V	110	—
47	0 V	111	—
48	0 V	112	—
49	0 V	113	P
50	0 V	114	P
51	0 V	115	P
52	200 mV	116	P
53	0 V	117	2.58 V
54	0 V	118	2.58 V
55	2.6 V	119	0.9 V
56	0 V	120	100 mV
57	0 V	121	2.19 V
58	2.6 V	122	2.58 V
59	0 V	123	2.58 V
60	0 V	124	0 V
61	0 V	125	1.48 V
62	2.5 V	126	2.58 V
63	2.54 V	127	2.58 V
64	2.6 V	128	2.58 V

IC751

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	2.62 V
4	200 mV
5	0 V
6	2.62 V
7	0 V
8	2.62 V
9	400 mV
10	0 V
11	2.62 V
12	400 mV
13	0 V
14	2.62 V

IC761

PIN NO.	VOLTAGE
1	P
2	0 V
3	P
4	P
5	2.47 V
6	P
7	0 V
8	P
9	P
10	2.47 V
11	P
12	P
13	0 V
14	2.47 V

IC803

PIN NO.	VOLTAGE
1	0 V
2	1.69 V
3	0 V
4	0 V

IC813

PIN NO.	VOLTAGE
1	0 V
2	P
3	P
4	P
5	P
6	P
7	P
8	P
9	P
10	0 V
11	P
12	P
13	P
14	P
15	P
16	P
17	P
18	P
19	0 V
20	2.62 V

IC601

PIN NO.	VOLTAGE
1	0 V
2	1.27 V
3	1.27 V
4	1.27 V
5	0 V
6	0 V
7	600 mV
8	0 V
9	0 V
10	2.64 V
11	2.57 V
12	2.57 V
13	0 V
14	2.6 V
15	0 V
16	0 V
17	0 V
18	0 V
19	2.64 V
20	200 mV
21	200 mV
22	0 V
23	0 V
24	0 V
25	0 V
26	1.26 V
27	1.26 V
28	0 V
29	0 V
30	0 V
31	0 V
32	0 V
33	0 V
34	0 V
35	2.57 V
36	0 V
37	P
38	2.62 V-P
39	2.65 V+P
40	6.2 V-P
41	6.21 V
42	6.21 V
43	2.64 V
44	0 V
45	0 V
46	0 V
47	0 V
48	2.64 V
49	0 V
50	2.64 V
51	0 V
52	0 V
53	0 V
54	0 V
55	0 V
56	0 V
57	1.25 V
58	0 V
59	400 mV
60	1.25 V
61	1.25 V
62	1.27 V
63	1.25 V
64	0 V

IC841

PIN NO.	VOLTAGE
1	1.24 V
2	2.6 V
3	0 V
4	0 V
5	P

IC842A

PIN NO.	VOLTAGE
1	2.6 V
2	2.6 V+P
3	0 V
4	2.6 V
5	0 V
6	4.5 V

Q211

PIN NO.	VOLTAGE
1	1.09 V
2	600 mV
3	2.6 V
4	—
5	0 V
6	2.6 V

Q212

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	1.09 V
4	1.09 V
5	4.45 V
6	4.45 V

IC821

PIN NO.	VOLTAGE
1	P
2	0 V
3	0 V
4	P
5	0.54 V
6	0 V
7	1.18 V
8	2.59 V
9	1.83 V
10	1.32 V
11	1.31 V
12	1.26 V
13	2.62 V
14	0 V
15	0 V
16	0 V
17	0 V
18	0 V
19	100 mV
20	0 V

Q252

PIN NO.	VOLTAGE
1	0 V
2	2.6 V
3	4.24 V

Q253

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	4.23 V
4	0 V
5	0 V
6	0 V

Q255

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	0 V
4	0 V
5	0 V
6	0 V

Q314

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	2.6 V

Q331

PIN NO.	VOLTAGE
1	2.17 V
2	2.6 V
3	0 V

Q332

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	2.17 V

Q333

PIN NO.	VOLTAGE
1	0 V
2	—
3	—
4	0 V
5	0 V
6	1.09 V

Q351

PIN NO.	VOLTAGE
1	2.64 V
2	2.64 V
3	0 V
4	2.64 V
5	2.64 V
6	2.64 V

Q493

PIN NO.	VOLTAGE
1	2.6 V
2	2.6 V
3	0 V
4	2.6 V
5	2.6 V
6	2.6 V

Q701

PIN NO.	VOLTAGE
1	2.62 V
2	2.6 V
3	0 V
4	2.6 V
5	2.6 V
6	0 V

Q721

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	4.45 V

Q751

PIN NO.	VOLTAGE
1	0 V
2	P
3	0 V
4	0 V
5	P
6	0 V

Q752

PIN NO.	VOLTAGE
1	0 V
2	P
3	0 V
4	0 V
5	P
6	0 V

Q761

PIN NO.	VOLTAGE
1	0 V
2	P
3	0 V
4	0 V
5	P
6	0 V

Q762

PIN NO.	VOLTAGE
1	0 V
2	P
3	0 V
4	0 V
5	P
6	0 V

Q801

PIN NO.	VOLTAGE
1	1.01 V
2	1.26 V
3	1.01 V

Q802

PIN NO.	VOLTAGE
1	4.5 V
2	1.24 V
3	1.24 V

Q803

PIN NO.	VOLTAGE
1	0.79 V
2	0 V
3	0 V

Q804

PIN NO.	VOLTAGE
1	2.62 V
2	0 V
3	2.6 V

Q805

PIN NO.	VOLTAGE
1	0 V
2	2.6 V
3	0 V

Q806

PIN NO.	VOLTAGE
1	0.81 V
2	0.77 V
3	1.08 V
4	0.81 V
5	1.17 V
6	1.08 V

Q809

PIN NO.	VOLTAGE
1	0 V
2	2.58 V
3	4.5 V
4	4.5 V
5	0 V
6	0 V

Q828

PIN NO.	VOLTAGE
1	1.26 V
2	4.24 V
3	1.26 V
4	4.32 V
5	1.26 V
6	1.26 V
7	1.26 V
8	1.26 V

Q841

PIN NO.	VOLTAGE
1	P
2	0 V
3	P

Q843

PIN NO.	VOLTAGE
1	2.6 V
2	2.6 V
3	0 V
4	2.6 V
5	2.6 V
6	2.6 V

Q861

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	1.24 V

Q863

PIN NO.	VOLTAGE
1	P
2	0 V
3	P

Q865

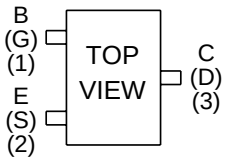
PIN NO.	VOLTAGE
1	0 V
2	0 V
3	2.6 V

NOTES ON SCHEMATIC DIAGRAM

- Resistor:
  To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with “Fusible” is a fuse type.
- Capacitor:
  To indicate the unit of capacitor, a symbol P is used: this symbol P means pico-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression “capacitance/withstand voltage” is used.
  (CH), (TH), (RH), (UJ): Temperature compensation
  (ML): Mylar type
- The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.
- Parts marked with “⚠” (⊏ ═ ═ ═ ⊐) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF. NO	DESCRIPTION	POSITION
SW401	EJECT	OFF—ON
SW402	OPEN	OFF—ON
SW901	PROTECT	OFF—ON
SWA01	REC	OFF—ON
SWA02	PLAY/PAUSE	OFF—ON
SWA03	MENU	OFF—ON
SWA04	ENTER/USB	OFF—ON
SWA05	SKIP UP	OFF—ON
SWA06	VOLUME UP	OFF—ON
SWA07	POWER/STOP	OFF—ON
SWA08	VOLUME DOWN	OFF—ON
SWA09	SKIP DOWN	OFF—ON
SWA10	ERASE	OFF—ON
SWA11	SPEAKER OUTPUT SELECTOR	MD—LINE IN
SWA15	DISP/BASS	OFF—ON
SWA16	MODE/CHARGE	OFF—ON

TYPES OF TRANSISTOR AND DIODE



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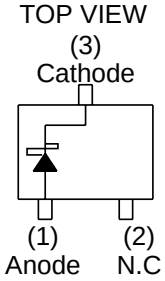
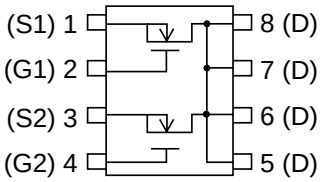
2SC5383 F
2SJ613
KRC404 E
RT1N250 U
RT1P150 U
MCH3409
MCH3427



F10J2E



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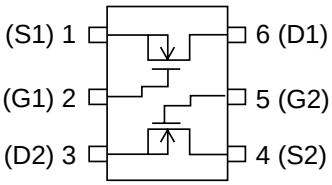

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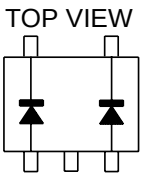
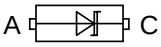


SBE803

1SS388
MA111



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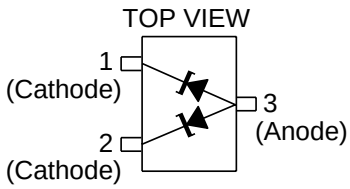
RB521S30



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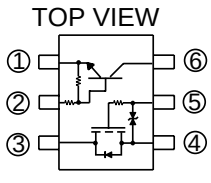

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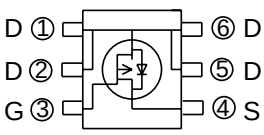

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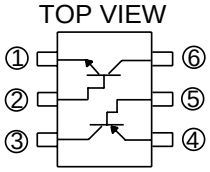

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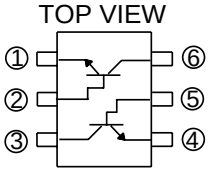

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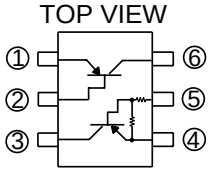

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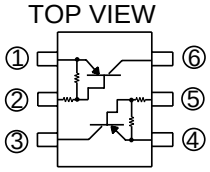
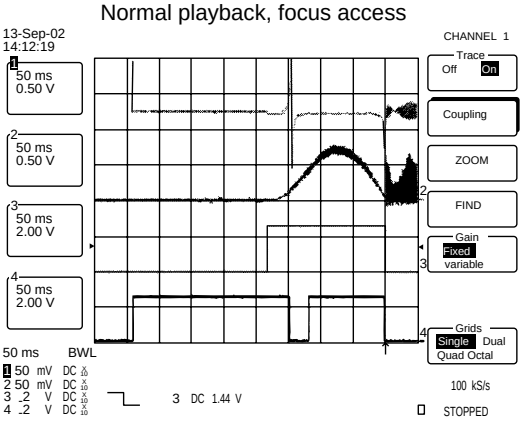


XP04113

WAVEFORMS OF MD CIRCUIT

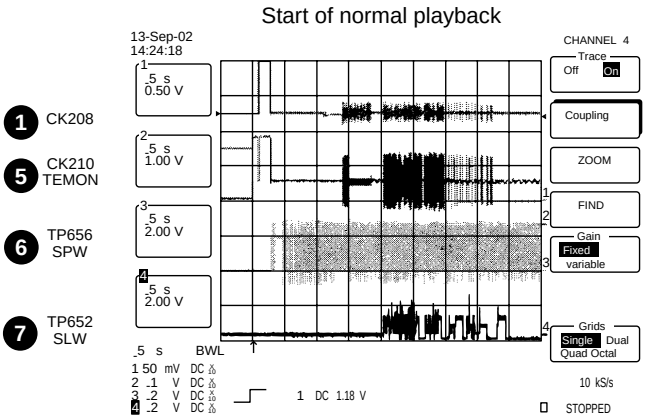
Normal playback, focus access

1 CK208 FEMON
2 TP120 F+
3 CK205 SENSE
4 CK204 FOK



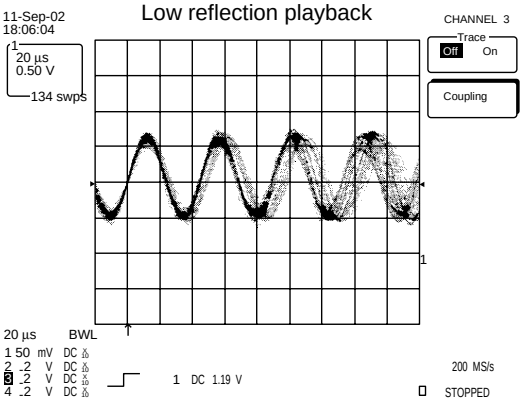
Start of normal playback

1 CK208
5 CK210 TEMON
6 TP656 SPW
7 TP652 SLW



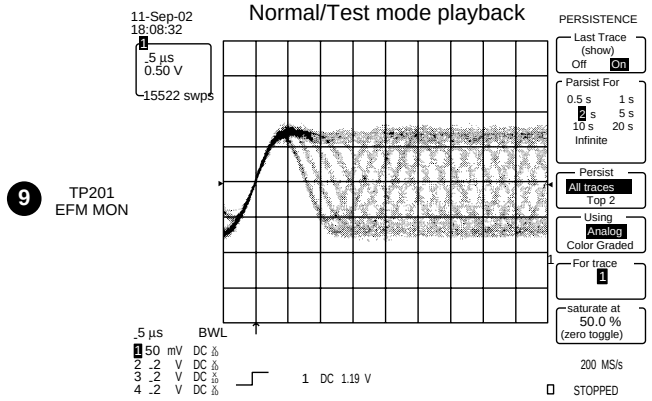
Low reflection playback

8 CK108 WB



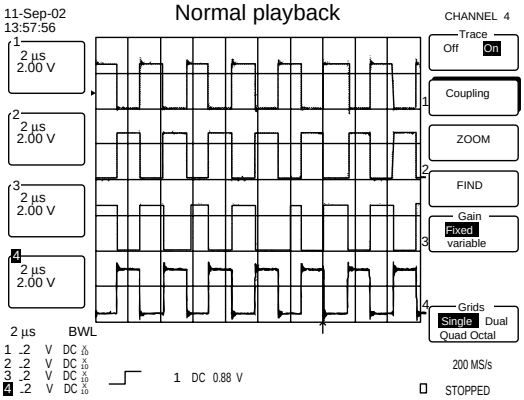
Normal/Test mode playback

9 TP201 EFM MON



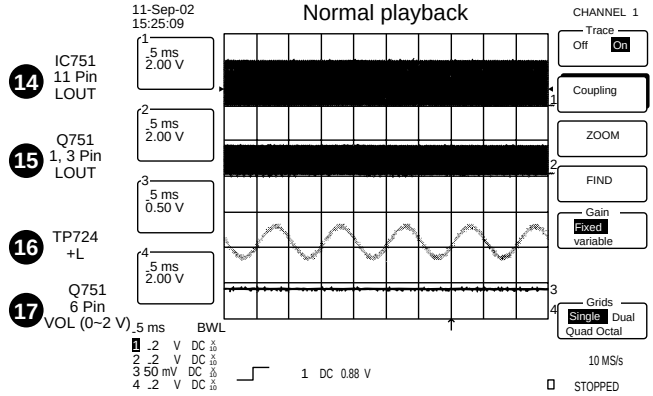
Normal playback

10 IC201 72 Pin LOUT
11 IC201 73 Pin LOUTX
12 IC201 68 Pin ROUT
13 IC201 69 Pin ROUTX

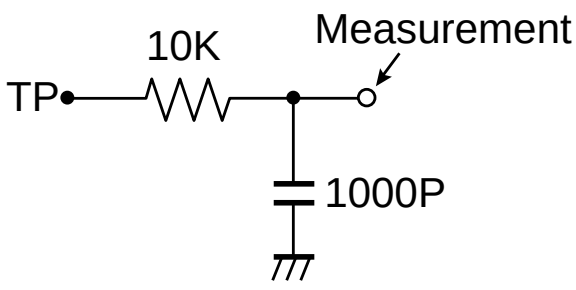


Normal playback

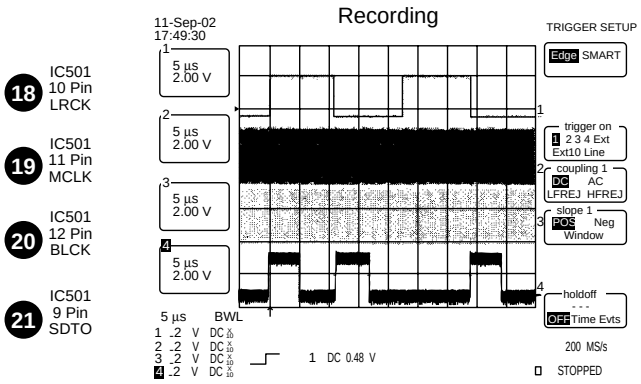
14 IC751 11 Pin LOUT
15 Q751 1, 3 Pin LOUT
16 TP724 +L
17 Q751 6 Pin VOL (0~2 V)

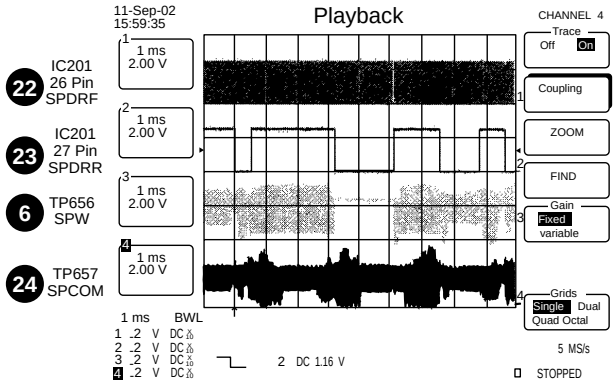


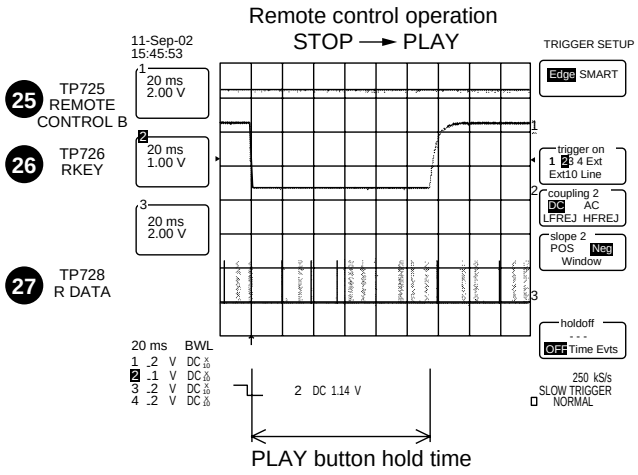
For TP208, TP209, and TP210, use the specific LPF, and observe the waveform.

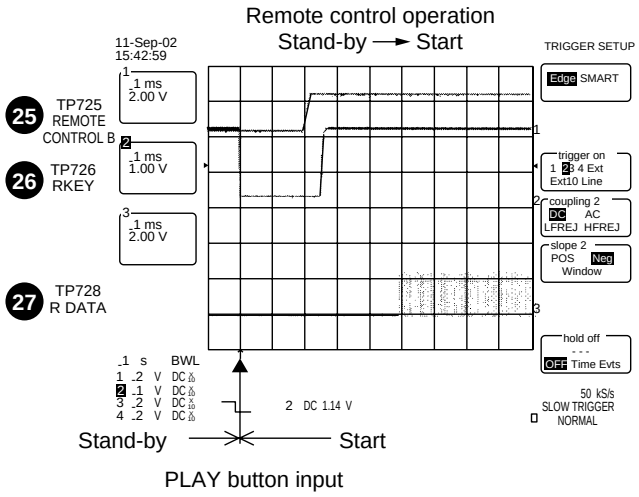


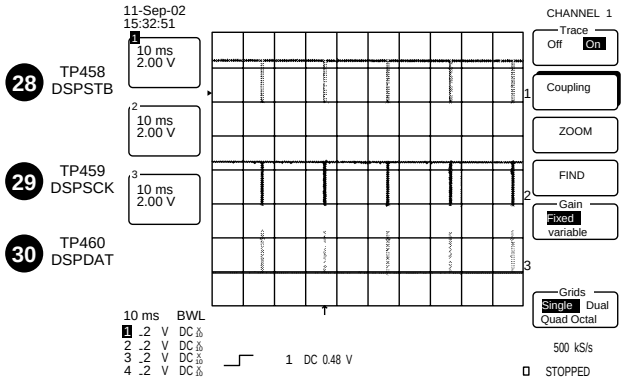
When watching the EEM monitor (TP201)
Set MSL from 00 H to 80 H with EEPROM control setting.
After completion restore 00 H.


Recording
18 IC501 10 Pin LRCK
19 IC501 11 Pin MCLK
20 IC501 12 Pin BLCK
21 IC501 9 Pin SDTO
11-Sep-02
17:49:30
TRIGGER SETUP
Edge SMART
trigger on
1 2 3 4 Ext
Ext10 Line
coupling 1
DC AC
LFREJ HFREJ
slope 1
POS Neg
Window
holdoff
OFF Time Evts
5 µs BWL
200 MS/s
STOPPED


Playback
22 IC201 26 Pin SPDRF
23 IC201 27 Pin SPDRR
6 TP656 SPW
24 TP657 SPCOM
11-Sep-02
15:59:35
CHANNEL 4
Trace
Off On
Coupling
ZOOM
FIND
Gain
Fixed variable
Grids
Single Dual
Quad Octal
1 ms BWL
5 MS/s
STOPPED


Remote control operation
STOP → PLAY
25 TP725 REMOTE CONTROL B
26 TP726 RKEY
27 TP728 R DATA
11-Sep-02
15:45:53
TRIGGER SETUP
Edge SMART
trigger on
1 2 3 4 Ext
Ext10 Line
coupling 2
DC AC
LFREJ HFREJ
slope 2
POS Neg
Window
holdoff
OFF Time Evts
20 ms BWL
250 kS/s
SLOW TRIGGER
NORMAL
PLAY button hold time


Remote control operation
Stand-by → Start
25 TP725 REMOTE CONTROL B
26 TP726 RKEY
27 TP728 R DATA
11-Sep-02
15:42:59
TRIGGER SETUP
Edge SMART
trigger on
1 2 3 4 Ext
Ext10 Line
coupling 2
DC AC
LFREJ HFREJ
slope 2
POS Neg
Window
hold off
OFF Time Evts
.1 s BWL
50 kS/s
SLOW TRIGGER
NORMAL
Stand-by
Start
PLAY button input


28 TP458 DSPSTB
29 TP459 DSPSCK
30 TP460 DSPDAT
11-Sep-02
15:32:51
CHANNEL 1
Trace
Off On
Coupling
ZOOM
FIND
Gain
Fixed variable
Grids
Single Dual
Quad Octal
10 ms BWL
500 kS/s
STOPPED

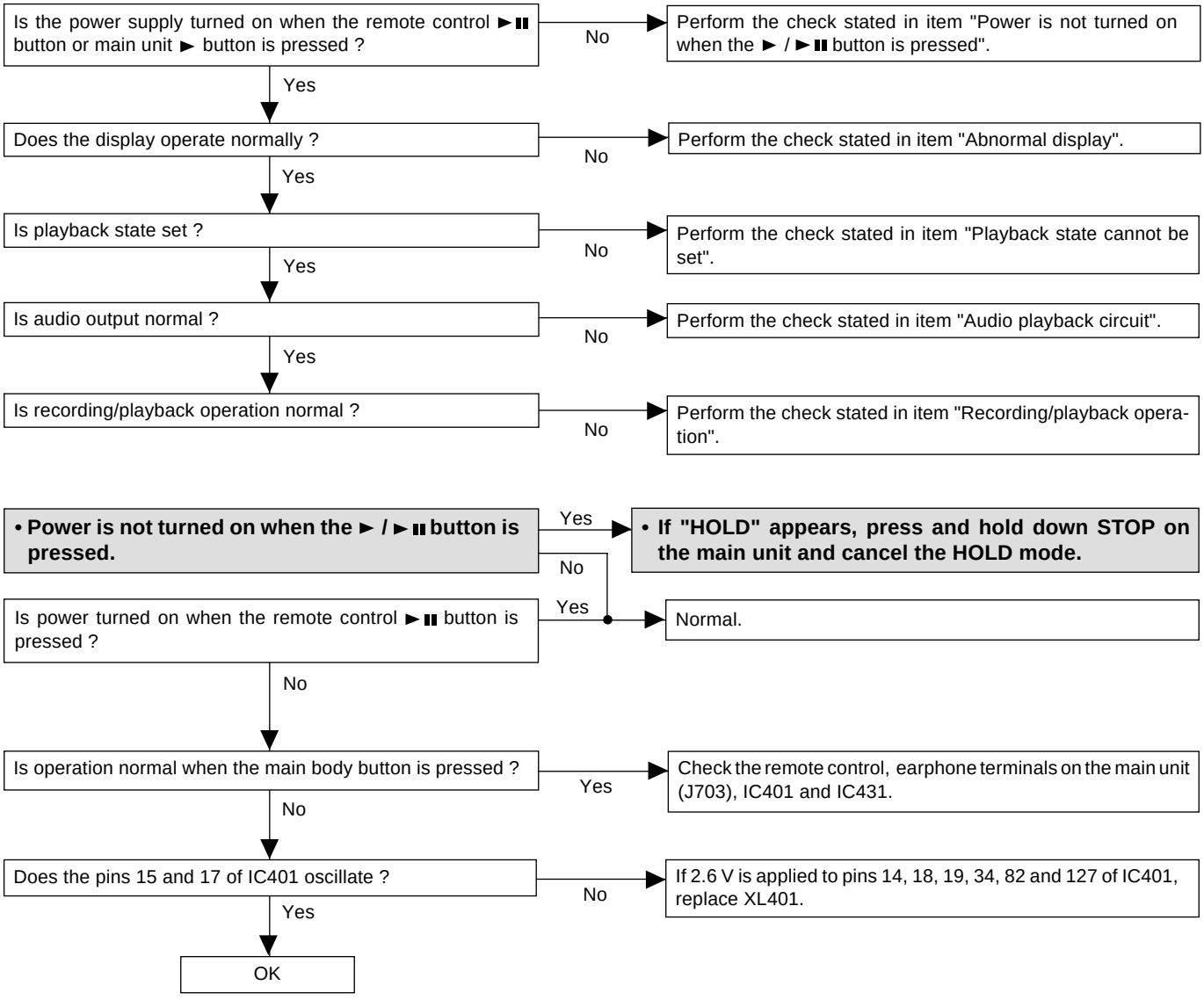
TROUBLESHOOTING

Use the test mode which indicates trouble causes before repairing the unit. This mode records maximum 10 past error causes as codes. Refer them for repairing.

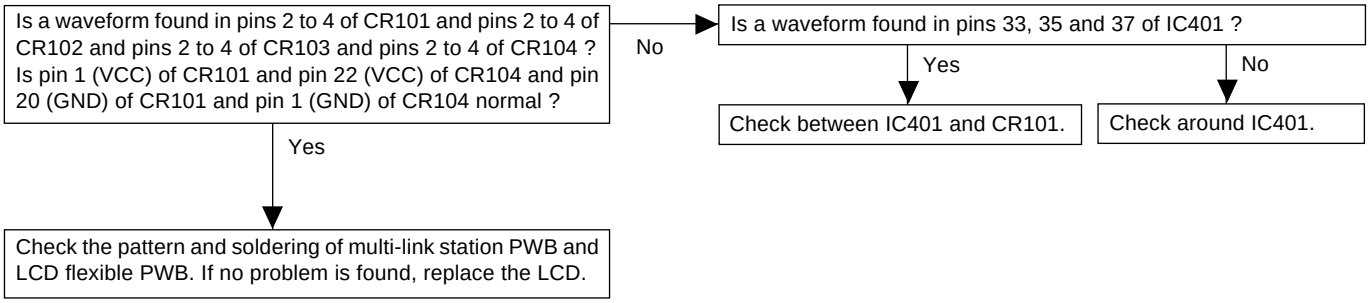
Preparations

If dusts and foreign materials are accumulated on the pickup lens, playback sounds can be skipped or the TOC (Table of Contans) can't be displayed. Clean the object lens and check the playback. When lens are dirty, do the following.
Turn off the power and wipe lens softly with a cleaning paper and a little marketing so as not to damage them.
Do not touch lens with bare hands.

If the unit doesn't work.
If the unit doesn't start after cleaning the pickup objects lens lens, check the unit as follows.

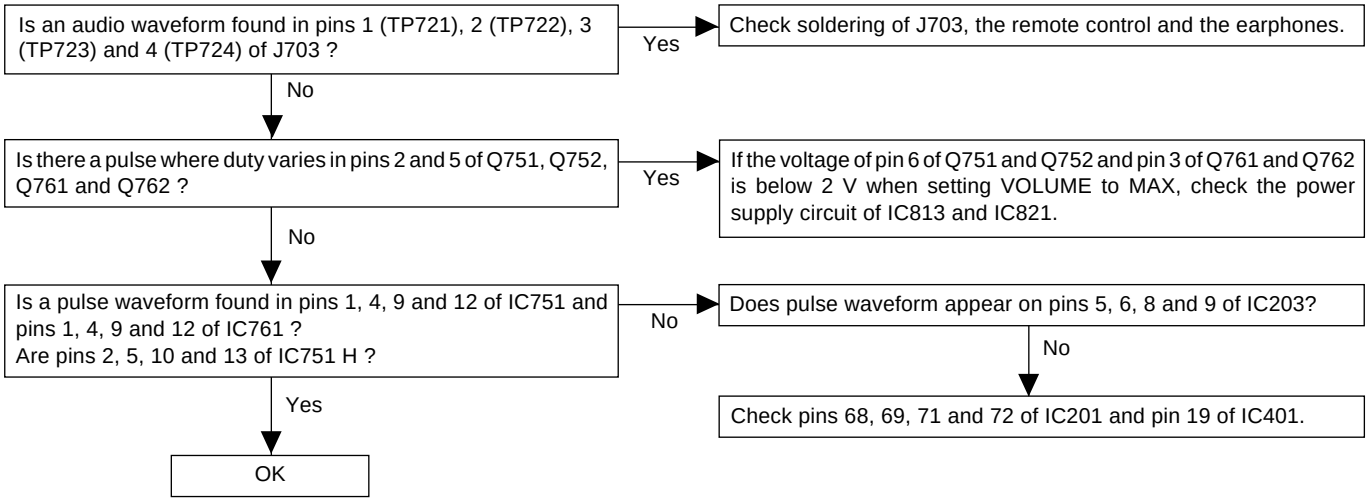

Is the power supply turned on when the remote control ►II button or main unit ► button is pressed ?
No
Perform the check stated in item "Power is not turned on when the ► / ►II button is pressed".
Yes
Does the display operate normally ?
No
Perform the check stated in item "Abnormal display".
Yes
Is playback state set ?
No
Perform the check stated in item "Playback state cannot be set".
Yes
Is audio output normal ?
No
Perform the check stated in item "Audio playback circuit".
Yes
Is recording/playback operation normal ?
No
Perform the check stated in item "Recording/playback operation".
• Power is not turned on when the ► / ►II button is pressed.
Yes
• If "HOLD" appears, press and hold down STOP on the main unit and cancel the HOLD mode.
No
Is power turned on when the remote control ►II button is pressed ?
Yes
Normal.
No
Is operation normal when the main body button is pressed ?
Yes
Check the remote control, earphone terminals on the main unit (J703), IC401 and IC431.
No
Does the pins 15 and 17 of IC401 oscillate ?
No
If 2.6 V is applied to pins 14, 18, 19, 34, 82 and 127 of IC401, replace XL401.
Yes
OK

• Abnormal display

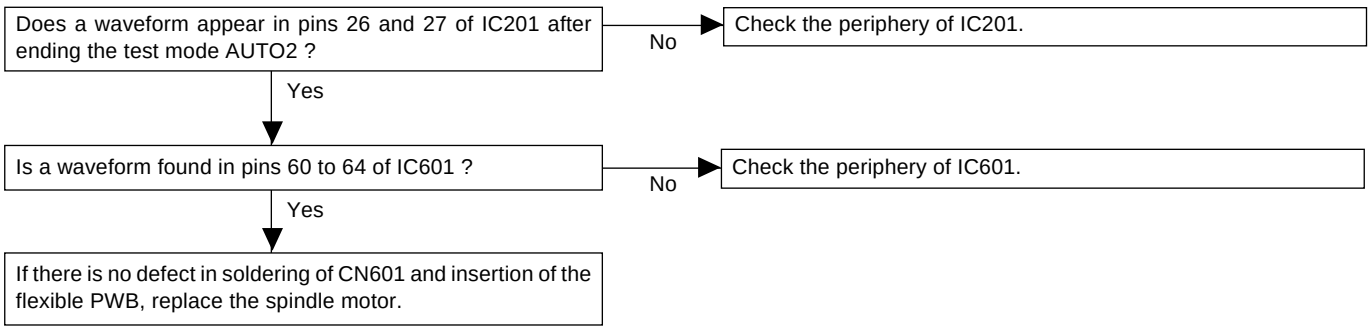

Is a waveform found in pins 2 to 4 of CR101 and pins 2 to 4 of CR102 and pins 2 to 4 of CR103 and pins 2 to 4 of CR104 ?
Is pin 1 (VCC) of CR101 and pin 22 (VCC) of CR104 and pin 20 (GND) of CR101 and pin 1 (GND) of CR104 normal ?
No
Is a waveform found in pins 33, 35 and 37 of IC401 ?
Yes
No
Check between IC401 and CR101.
Check around IC401.
Yes
Check the pattern and soldering of multi-link station PWB and LCD flexible PWB. If no problem is found, replace the LCD.

• Audio playback circuit

If playback time is counted but no sound is heard during continuous playback.

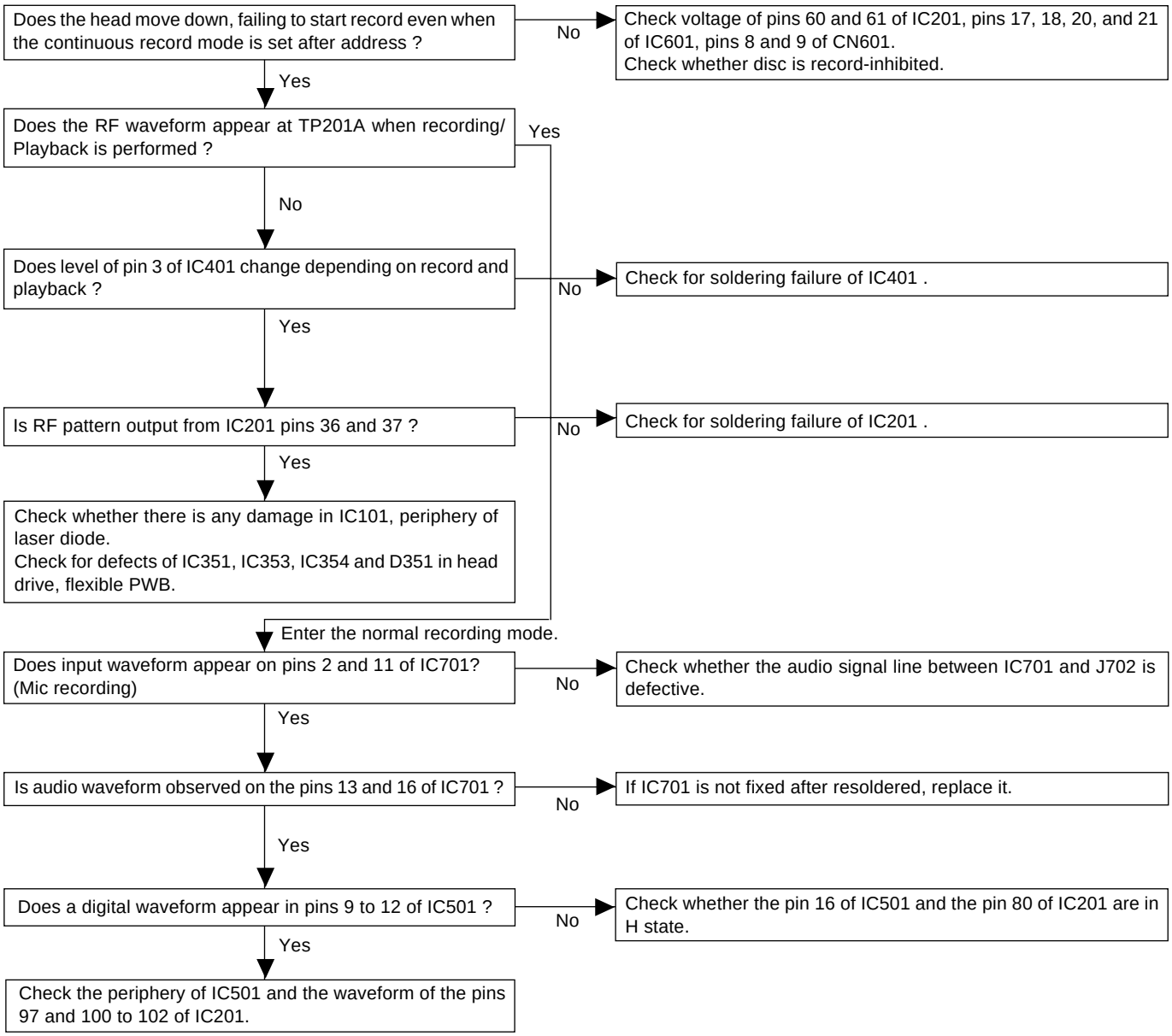

Is an audio waveform found in pins 1 (TP721), 2 (TP722), 3 (TP723) and 4 (TP724) of J703 ?
Yes
Check soldering of J703, the remote control and the earphones.
No
Is there a pulse where duty varies in pins 2 and 5 of Q751, Q752, Q761 and Q762 ?
Yes
If the voltage of pin 6 of Q751 and Q752 and pin 3 of Q761 and Q762 is below 2 V when setting VOLUME to MAX, check the power supply circuit of IC813 and IC821.
No
Is a pulse waveform found in pins 1, 4, 9 and 12 of IC751 and pins 1, 4, 9 and 12 of IC761 ?
Are pins 2, 5, 10 and 13 of IC751 H ?
No
Does pulse waveform appear on pins 5, 6, 8 and 9 of IC203?
No
Check pins 68, 69, 71 and 72 of IC201 and pin 19 of IC401.
Yes
OK

• The spindle motor does not rotate.


Does a waveform appear in pins 26 and 27 of IC201 after ending the test mode AUTO2 ?
No
Check the periphery of IC201.
Yes
Is a waveform found in pins 60 to 64 of IC601 ?
No
Check the periphery of IC601.
Yes
If there is no defect in soldering of CN601 and insertion of the flexible PWB, replace the spindle motor.

• Recording/playback operation

Insert a low reflection disc, and ascertain audio output by normal playback, and then set TEST REC mode.
Change MSL from 00 H to 80 H by the control setting of EEPROM. After completing the operation, return in to 00 H.


Does the head move down, failing to start record even when the continuous record mode is set after address ?
No
Check voltage of pins 60 and 61 of IC201, pins 17, 18, 20, and 21 of IC601, pins 8 and 9 of CN601.
Check whether disc is record-inhibited.
Yes
Does the RF waveform appear at TP201A when recording/ Playback is performed ?
Yes
No
Does level of pin 3 of IC401 change depending on record and playback ?
No
Check for soldering failure of IC401 .
Yes
Is RF pattern output from IC201 pins 36 and 37 ?
No
Check for soldering failure of IC201 .
Yes
Check whether there is any damage in IC101, periphery of laser diode.
Check for defects of IC351, IC353, IC354 and D351 in head drive, flexible PWB.
Enter the normal recording mode.
Does input waveform appear on pins 2 and 11 of IC701? (Mic recording)
No
Check whether the audio signal line between IC701 and J702 is defective.
Yes
Is audio waveform observed on the pins 13 and 16 of IC701 ?
No
If IC701 is not fixed after resoldered, replace it.
Yes
Does a digital waveform appear in pins 9 to 12 of IC501 ?
No
Check whether the pin 16 of IC501 and the pin 80 of IC201 are in H state.
Yes
Check the periphery of IC501 and the waveform of the pins 97 and 100 to 102 of IC201.

FUNCTION TABLE OF IC

IC201 VHiLR37820+-1 : Endec/Servo/Atrac (LR37820) (1/3)

Pin No.	Terminal Name	Input/Output	Function
1*	EFMMON	Analog Output	EFM monitor output.
2	AVCC1	Input	Analog power supply. (For EFM system)
3	EFMI	Analog Input	EFM signal input from RF amplifier.
4	AGND1	—	Analog GND.
5	AVCC2	Input	Analog power supply. (For AD)
6	AGND2	—	Analog GND.
7	VREF	Analog Input	Reference voltage input of RF amplifier.
8	WBI	Analog Input	ADIP wobble signal.
9	TCG	Analog Input	Track cross signal.
10	AIN	Analog Input	A-signal for focus servo.
11	BIN	Analog Input	B-signal for focus servo.
12	EIN	Analog Input	E-signal for tracking servo.
13	FIN	Analog Input	F-signal for tracking servo.
14	VBAT	Analog Input	Power supply voltage detection signal for constant voltage servo.
15-17	TEST0-TEST2	Schmidt Input	Input for test. Normally connected to GND.
18	TEST3	Schmidt Input	(For scan circuit)
19*	X176KO	Output	Clock output. f = 176.4 kHz (4fs). Servo OFF: L/Always L
20	FODRF	Output	Focus servo forward output.
21	FODRR	Output	Focus servo reverse output.
22	TRDRF	Output	Tracking servo forward output.
23	TRDRR	Output	Tracking servo reverse output.
24	SLDRF	Output	Slide servo forward output.
25*	SLDRR	Output	Slide servo reverse output.
26	SPDRF	Output	Spindle servo forward output.
27	SPDRR	Output	Spindle servo reverse output.
28	VDD2	Input	Power supply for interface.
29	DGND	—	GND for interface.
30*	ACRCER	Output	CRC error flag monitor output of ADIP.
31*	TCRS	Output	Track cross signal.
32*	PLLCK	Three-state Output	EFM PLL clock output on playback.
33*	FEMON	Output	Focus error signal monitor output.
34*	TOTMON	Output	Total signal monitor output. Series resistor 10 - 100 kohm built in.
35*	TEMON	Output	Tracking error signal monitor output.
36	EFMOX	Output	EFM signal output on recording. (Inversion output of 50-pin)
37	EFMO	Output	EFM signal output on recording. (C1F (C1 error flag) monitor on recording)
38	X700KO	Output	Clock output. f=705.6 kHz
39	VDD5	Input	Power supply for core.
40	DGND	—	GND for core.
41	VDD1	Input	Power supply for interface.
42	RAA3	Output	Address output to external D-RAM. ADR3
43	RAA2	Output	Address output to external D-RAM. ADR2
44	RAA1	Output	Address output to external D-RAM. ADR1
45	RAA0	Output	Address output to external D-RAM. ADR0 (LSB)
46	RAA10	Output	Address output to external D-RAM. ADR10
47	VDD3	Input	Power supply for interface. (DRAM)
48	RAA4	Output	Address output to external D-RAM. ADR4
49	RAA5	Output	Address output to external D-RAM. ADR5
50	RAA6	Output	Address output to external D-RAM. ADR6
51	RAA7	Output	Address output to external D-RAM. ADR7

In this unit, the terminal with asterisk mark (*) is open terminal which is not connected to the outside.

IC201 VHiLR37820+-1 : Endec/Servo/Atrac (LR37820) (2/3)

Pin No.	Terminal Name	Input/Output	Function
52	RAA8	Output	Address output to external D-RAM. ADR8
53*	RAOEX	Output	Data output enable signal output to external D-RAM.
54	DGND	—	Digital GND.
55	RACASX	Output	Column address strobe signal output to external D-RAM.
56	RAD2	Input/Three-state Output	Data input/output with external D-RAM. D2
57	RAD3	Input/Three-state Output	Data input/output with external D-RAM. D3 (MSB)
58	RAA9	Output	Address output to external D-RAM. ADR9
59	RARASX	Output	Row address strobe signal output to external D-RAM.
60	RAWEX	Output	Data write enable signal output to external D-RAM.
61	RAD1	Input/Three-state Output	Data input/output with external D-RAM. D1
62	RAD0	Input/Three-state Output	Data input/output with external D-RAM. D0 (LSB)
63*	RAA11	Output	Address output to external D-RAM. (ADR11: used by 64 Mbit)
64	AGND4	—	Analog GND.
65	VOLDAC	—	DAC for volume. Stop by microcomputer setting. Stop: HiZ
66	AVCC4	Input	Analog power supply.
67	DGND4R	—	Digital GND.
68*	ROUTX	Output	1 bit PWM Rch (reversed phase)
69	ROUT	Output	1 bit PWM Rch
70	VDD4LR	Input	Analog power supply.
71	MUTE	Output	Mute output.
72	LOUT	Output	1 bit PWM Lch
73*	LOUTX	Output	1 bit PWM Lch (reversed phase)
74	DGND4L	—	Digital GND.
75, 76	FWMVDD	Input	PWM power supply.
77, 78	FWMOUT	—	PWM power supply.
79	PON	Input	Sync signal input for microcomputer power on.
80	DGND	—	Digital GND.
81	VDDX	Input	Internal digital power supply.
82	XI	Input	Oscillation circuit input. 33.8688 MHz
83	XO	Output	Oscillation circuit output. 33.8688 MHz
84	VDD1	Input	Power supply for interface.
85	AGND3	—	Analog GND.
86*	PLLBVC	Analog Output	Terminal of external capacitor for internal PLLB.
87	EXTC	—	Terminal of external capacitor for LPF of PLL VCO.
88	AGND3	—	Analog GND.
89	DIN2	Schmidt Input/ Three-state Output	DIO input signal/Net MD LSI IF (output). Expansion port 4.
90	CDDATA/DISP1F3	Output	Data output for display indication.
91	CDLRCK/DISP1F1	Output	L/R data output for display indication.
92	CDBLCK/DISP1F2	Output	Clock output for display indication.
93	DIN	Schmidt Input	Digital input signal.
94*	DOUT	Output	Digital output signal.
95	DEFECT	Schmidt Input	Defect input.
96*	DILPCK	—	Not used.
97	ADDATA	Schmidt Input	Audio data input.
98	DHPIN	—	Stop by microcomputer setting. Stop: L
99	DADATA	Output	Audio data output.
100	LRCK	Output	Lch/Rch switching output of music data.
101	BCLK	Output	Shift clock of music data.
102	DFCK	Output	Clock for AD converter digital filter.
103	VDD2	Input	Power supply for interface.

In this unit, the terminal with asterisk mark (*) is open terminal which is not connected to the outside.

IC201 VHiLR37820+-1 : Endec/Servo/Atrac (LR37820) (3/3)

Pin No.	Terminal Name	Input/Output	Function
104	DGND	—	Digital GND.
105*	SBCK	Schmidt Input/ Three-state Output	DIN subcode read clock. Expansion port 3.
106*	SBO	Output	DIN subcode serial data. Expansion port 2.
107*	SBSY	Output	DIN subcode block sync signal. Expansion port 0.
108*	SFSY	Output	DIN subcode frame sync signal. Expansion port 1.
109	VDD5	Input	Power supply for interface.
110	FOK	Output	Focus OK detection signal.
111	SENSE	Output	Servo status detection signal.
112	COUT	Output	Track cross signal output.
113	MCCK	Output	Clock output for microcomputer.
114	DINTX	Output	Terminal of interrupt request output to system control interface.
115	VDD1	Input	Power supply for interface.
116	DGND	—	Digital GND.
117	RSTX	Schmidt Input	Chip reset input. L: reset. (Note)
118	SYD0	Schmidt Input/ Three-state Output	Data bus terminal of system control interface. (LSB)
119-124	SYD1-SYD6	Schmidt Input/ Three-state Output	Data bus terminal of system control interface.
125	SYD7	Schmidt Input/ Three-state Output	Data bus terminal of system control interface. (MSB)
126	SYWRX	Schmidt Input	Register write pulse input of system control interface.
127	SYRDX	Schmidt Input	Register read pulse input of system control interface.
128	SYRS	Schmidt Input	Register selection input of system control interface.

In this unit, the terminal with asterisk mark (*) is open terminal which is not connected to the outside.

List of TEST port settings

TEST1	TEST0	Details
H	H	Normal mode
H	L	No adjustment mode
L	H	Test mode
L	L	(Settings prohibited)

List of LDCNT port settings

LDCNT1	LDCNT0	Details
H	H	Brake
H	L	Drive UP
L	H	Drive DOWN
L	L	Output OFF

IC401 RH-iX0605AW00 : System Microcomputer (IX0605AW) (1/3)

Pin No.	Port Name	Terminal Name	Input/Output	Function
1*	P96	CKSTP	Output	Microcomputer operation monitor output.
2	P95	LDON	Output	P.U. laser ON/OFF control output.
3	DA1	LDVAR	Output	P.U. laser power setting output.
4*	DA0	MCMON	Output	Internal operation status monitor.
5*	P92	N.C.	Output	Reserve
6	TB1IN	SPIN	Input	Spindle motor FG pulse detection input.
7	TB0IN	CIN	Input	Track cross signal/focus drive detection.
8*	P141	N.C.	Output	Reserve
9	P140	HDIHS	Output	Recording current high/normal speed switching.
10	BYTE	BYTE	Input	External data bus width selection input.
11	CNVSS	CNVSS	Input	Processor mode switching input.
12	P87	CORCT2	Output	LSI Vdd1 PWM power SW ON/OFF.
13	P86	SYCPW	Output	System LSI core power supply ON/OFF.
14	RESET	_RESET	Input	Microcomputer hardware reset input.
15	XOUT	EXTAL	—	Crystal oscillator connection terminal.
16	VSS	VSS	—	Ground potential.
17	XIN	XTAL	—	Crystal oscillator connection terminal.
18	VCC1	VCC1	Input	Positive power supply.
19	NMI	NMI	Input	Reserve
20	INT2	_DINT	Input	System LSI interrupt.
21	INT1	_CKINT	Input	Cradle interrupt key detection input.
22	INT0	_HKINT	Input	Main unit interrupt key detection input.
23	P81/TA4IN	_CHGON	Output	Reserve
24*	P80	RCPCNT	Output	Recording circuit power supply control output.
25	TA3IN	_RKINT	Input	Remote control interrupt key detection input.
26	P76	HDON	Output	Recording head current control output.
27	P75	CHGCNT	Output	Charge control.
28	TA2OUT	BUZOUT	Output	Beep tone pulse output.
29	P73	CHGON	Output	Charge ON/OFF control output.
30	CLK2	SQC_SCK	Output	Security chip clock output.
31	RXD2	SQC_SI	Input	Security chip data input.
32	TXD2	SQC_SO	Output	Security chip data output.
33	TXD1	DSPDAT	Output	Main unit display data output.
34	VCC1	VCC1	Input	Positive power supply.
35	P66	DSPSTB	Output	Main unit display strobe output.
36	VSS	VSS	—	Ground potential.
37	CLK1	DSPSCK	Output	Main unit display data clock output.
38*	P64	TEST0	Input	Test mode setting input 0.
39	TXD0	RMDAT	Output	Remote control display data output.
40	RXD0	PCLID	Input	Jig IF data input.
41*	CLK0	SCK0	Output	Serial clock output. (Not used)
42	P60	OPICGA	Output	P.U. detection sensitivity switching output.
43	P137	SQC_INT	Input	Security chip interrupt.
44	P136	PLL_SW	Output	Security chip PLL SW.
45	P135	SRESET	Output	Security chip RESET.
46	P134	SQC_CS	Output	Security chip CS.
47*	P57	N.C.	Output	Reserve
48	P56	SGAIN	Input/Output	RF amplifier gain switching output.
49	P55	DISCP	Input/Output	RF amplifier TE polarity switching output.
50	P54	PSLUSB	Output	Microcomputer power supply selection from USB.
51	P133	PWSCCR	Output	Security chip core power supply control.

In this unit, the terminal with asterisk mark (*) is open terminal which is not connected to the outside.

IC401 RH-iX0605AW00 : System Microcomputer (IX0605AW) (2/3)

Pin No.	Port Name	Terminal Name	Input/Output	Function
52	P132	PWSCIO	Output	Security chip IO power supply control.
53	P131	MSENSE	Output	Mic sensitivity switching output.
54	P130	MCNT	Output	Mic power supply control output.
55	P53	RMTCNT	Output	Remote control power supply control output.
56	P52	AUPON	Output	1-bit audio power supply ON/OFF.
57	P51	RFPCNT	Output	RF-LSI power supply ON/OFF control output.
58*	P50	TEST1	Input	Test mode setting input 1.
59*	P127	N.C.	Output	Reserve
60	P126	LDCNTU	Output	Recording head up/down control output U.
61	P125	LDCNTD	Output	Recording head up/down control output.
62	P47	_MCPGI	Input	Microphone plug insertion detection input.
63	P46	JPNP	Input	Kana conversion/kana input status identification.
64	P45	_FOK	Input	Focus OK signal input.
65	P44	SENSE	Input	System LSI servo sense input.
66	P43	SLCNT3	Output	Stepping motor drive output 3.
67	P42	SLCNT2	Output	Stepping motor drive output 2.
68	P41	SLCNT1	Output	Stepping motor drive output 1.
69	A40	DISCPR	Input	Disc recording inhibition switch input.
70	P37	RADAT	Output	Audio IC serial data output.
71	P36	RACLK	Output	Audio IC data click output.
72	P35	RCLAT	Output	Recording audio IC data latch output.
73	P34	_EPCS	Output	EEPROM chip select output.
74	P33	EEPD	Input/Output	EEPROM serial data input/output.
75	P32	EEPK	Output	EEPROM serial clock output.
76	P31	EPRT	Output	EEPROM write protect control output.
77	P124	DFCKC	Output	Security IC clock input ON/OFF.
78	P123	BTRON	Output	Battery load resistance ON/OFF control.
79*	P122	OPTCNT	Output	Optical digital circuit ON/OFF control.
80	P121	ADPON	Output	A/D converter operation control output.
81*	P120	DAPON	Output	D/A converter operation control output.
82	VCC2	VCC2	Input	Positive power supply.
83	P31	DCNT1	Output	Mechanism driver enable output.
84	VSS	VSS	—	Ground potential.
85	P27	_AMUTE	Output	Audio output mute control.
86	P26	LED_R	Output	Record indicator on control output.
87	P25	LSICNT	Output	2.5 V system power supply ON/OFF control.
88	P24	DCNT2	Output	Head up/down motor driver P control.
89	P23	PCNT3	Output	Power supply section reference voltage ON/OFF control.
90	P22	CORCNT	Output	VDD1 bypass ON/OFF control.
91	P21	PCNT1	Output	System power supply ON/OFF control output.
92	P20	PCNT2	Output	Tr ON/OFF for power supply start.
93	P17/INT5	ARQD	Input	Disc lid open/close detection/rise request.
94	P16/INT4	VBAS	Input	VBAS detection. (Security chip)
95	P15/INT3	_DCEXT	Input/Output	DC IN presence/absence detection.
96	P14	_XRST	Output	System LSI hardware reset output.
97	P13	SYPVUP	Output	System LSI core power supply voltage control.
98	P12	SYRS	Output	System LSI register selection output.
99	P11	_SYRD	Output	System LSI read enable output.
100	P10	_SYWR	Output	System LSI write enable output.
101*	P07	N.C.	Output	Reserve
102*	P06	N.C.	Output	Reserve

In this unit, the terminal with asterisk mark (*) is open terminal which is not connected to the outside.

IC401 RH-iX0605AW00 : System Microcomputer (IX0605AW) (3/3)

Pin No.	Port Name	Terminal Name	Input/Output	Function
103*	P05	N.C.	Output	Reserve
104*	P04	N.C.	Output	Reserve
105*	P03	N.C.	Output	Reserve
106	P02	OEMP	Input	OEM destination identification input.
107	P01	PLVBTT	Input	Battery voltage detection. (Without amp)
108	AN10	_INPLUG	Input	Line/digital plug detection.
109	P117	SYD7	Input/Output	System LSI parallel data bus.
110	P116	SYD6	Input/Output	System LSI parallel data bus.
111	P115	SYD5	Input/Output	System LSI parallel data bus.
112	P114	SYD4	Input/Output	System LSI parallel data bus.
113	P113	SYD3	Input/Output	System LSI parallel data bus.
114	P112	SYD2	Input/Output	System LSI parallel data bus.
115	P111	SYD1	Input/Output	System LSI parallel data bus.
116	P110	SYD0	Input/Output	System LSI parallel data bus.
117	AN7	CIKEY	Input	Cradle interrupt key detection.
118	AN6	CAKEY	Input	Cradle normal key detection.
119	AN5	PLVBTA	Input	Battery voltage detection. (Via amp)
120	AN4	PLVDCI	Input	DC IN voltage (abnormality) detection input.
121	AN3	RKEY	Input	Remote control button operation detection input.
122	AN2	HAKEY	Input	Main unit normal key detection input.
123	AN1	HIKEY	Input	Main unit interrupt key detection input.
124	AVSS	AVSS	—	A/D, D/A converter ground potential.
125	AN0	TEMP	Input	Ambient temperature detection input.
126	VREF	VREF	Input	A/D, D/A converter reference voltage.
127	AVCC	AVCC	Input	A/D, D/A converter positive power supply.
128	P97	_EJSW	Input	Eject lever operation detection input.

In this unit, the terminal with asterisk mark (*) is open terminal which is not connected to the outside.

IC601 VHiLV8223T+-1 : Motor Driver (LV8223T) (1/2)

Pin No.	Port Name	Function
1	SPGND	GND of spindle output section.
2	SPVS	Power terminal spindle drive. A capacitor is connected to the paired GND.
3	FIL	Comparator filter terminal for detecting spindle motor position. A capacitor is connected between this and COMIN terminal (PIN).
4	COMIN	Comparator filter terminal for detecting spindle motor position. A capacitor is connected between this and FIL terminal (PIN).
5, 6	SGND	Small signal system GND terminal.
7	VCO	VCO oscillator terminal. A capacitor is connected to the paired GND. The VCO oscillation frequency varies depending on the motor revolutions (VCOIN terminal voltage).
8	RMAX	VCO maximum frequency setting terminal. If connection resistance is reduced, the VCO oscillation frequency rises.
9	VCOIN	VCO control voltage input terminal. A capacitor is connected to the paired GND. The control output corresponding to the motor revolutions is generated inside the logic, and the capacitor connected to the paired GND is charged. The VCO oscillation frequency is controlled by the voltage of this terminal.
10	MODE1	PWM frequency switching input terminal. "H" is selected when the CLK terminal (PIN) input frequency is 32 times of the spindle PWM frequency; "L" is selected if 64 times.
11	S/S	Start/stop terminal of spindle motor section. "H" level input: start.
12	MUTE3	Half bridge mute terminal. When L is input, each output terminal of the above driver turns to high impedance.
13	IN4	Half bridge control input terminal.
14	BRK	Brake terminal of spindle motor section. "L" level input: counter torque brake.
15	PWM	PWM signal input terminal. The output TR is turned ON by "H" input.
16	CLK	Reference clock input terminal for logic operation. Frequency of 32 or 64 times of the spindle PWM frequency is input.
17, 18	IN3F, IN3R	H bridge 3 logic input terminal.
19	VS3	H bridge 3 power terminal. A capacitor is connected to the paired GND.
20	OUT3F	H bridge 3 forward output terminal.
21	OUT3R	H bridge 3 reverse output terminal.
22	PGND3	H bridge 3 output section GND terminal.
23	PGND2	H bridge 2 output section GND terminal.
24	OUT2F	H bridge 2 forward output terminal.
25	OUT2R	H bridge 2 reverse output terminal.
26	VS2	H bridge 2 power terminal. A capacitor is connected to the paired GND.
27	VS1	H bridge 1 power terminal. A capacitor is connected to the paired GND.
28	OUT1F	H bridge 1 forward output terminal.
29	OUT1R	H bridge 1 reverse output terminal.
30	PGND1	H bridge 1 output section GND terminal.
31, 32	IN1F, IN1R	H bridge 1 logic input terminal.
33, 34	IN2R, IN2F	H bridge 2 logic input terminal.
35	MUTE	H bridge 1, 2 and 3-phase thread mute terminal. When L is input, each output terminal of the above driver turns to high impedance.
36	MUTE2	H bridge 3 mute terminal.
37	CP1	Pulse output terminal for raising charge pump pressure. A capacitor is connected between this and CPC1 terminal (PIN).
38	CP2	Pulse output terminal for raising charge pump pressure. A capacitor is connected between this and CPC2 terminal (PIN).
39	CPC1	Terminal for raising charge pump pressure. A capacitor is connected between this and CP1 terminal (PIN).
40	CPC2	Terminal for raising charge pump pressure. A capacitor is connected between this and CP2 terminal (PIN).
41	VG	Output terminal for raising charge pump pressure. A capacitor is connected to the paired GND.
42, 43	VCC	Small signal system power terminal. A capacitor is connected to the paired GND.
44-46	S1-S3	Logic input terminal for 3-phase thread section. The output is PIN.
47	SLVS	Power terminal for 3-phase thread drive. A capacitor is connected to the paired GND.
48	FG	FG pulse output terminal (MOS output). Pulse corresponding to 3 holes is output.

IC601 VHiLV8221T+-1 : Motor Driver (LV8221T) (2/2)

Pin No.	Port Name	Function
49	SLGND	GND of 3-phase thread output section.
50*	SUCO	Position detection comparator output terminal of thread driver section.
51	SUO	3-phase thread U-phase output terminal.
52	SVO	3-phase thread V-phase output terminal.
53*	SVCO	Position detection comparator output terminal of thread driver section.
54*	SWCO	Position detection comparator output terminal of thread driver section.
55	SWO	3-phase thread W-phase output terminal.
56	OUT4	Half bridge output terminal.
57	VS4	Half bridge power terminal. A capacitor is connected to the paired GND.
58	PGND4	GND terminal of half bridge output section.
59*	SCOM	Position detection comparator COM input terminal of thread driver section.
60	WOUT	3-phase spindle W-phase output terminal. A motor coil is connected.
61	VOUT	3-phase spindle V-phase output terminal. A motor coil is connected.
62	COM	Position detection comparator COM input terminal of thread driver section.
63	UOUT	3-phase spindle U-phase output terminal. A motor coil is connected.
64	TGND	Small signal system GND terminal.

In this unit, the terminal with asterisk mark (*) is open terminal which is not connected to the outside.

— M E M O —

SHARP PARTS GUIDE

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Explanation of capacitors/resistors parts codes

Capacitors

VCC ..... Ceramic type
VCK..... Ceramic type
VCT ..... Semiconductor type
VC • • MF ..... Cylindrical type (without lead wire)
VC • • MN..... Cylindrical type (without lead wire)
VC • • TV..... Square type (without lead wire)
VC • • TQ ..... Square type (without lead wire)
VC • • CY ..... Square type (without lead wire)
VC • • CZ ..... Square type (without lead wire)
VC • • • • • • • • • J .. The 13th character represents capacity difference.
("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
"C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)

If there are no indications for the electrolytic capacitors, error is ±20%.

Resistors

VRD ..... Carbon-film type
VRS ..... Carbon-film type
VRN ..... Metal-film type
VR • • MF ..... Cylindrical type (without lead wire)
VR • • MN..... Cylindrical type (without lead wire)
VR • • TV..... Square type (without lead wire)
VR • • TQ ..... Square type (without lead wire)
VR • • CY ..... Square type (without lead wire)
VR • • CZ ..... Square type (without lead wire)
VR • • • • • • • • • J .. The 13th character represents error.
("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.

NOTE:
Parts marked with "⚠" are important for maintaining the safety of the set.
Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

IM-DR580H

NO.	PART CODE	★	PRICE RANK	DESCRIPTION
INTEGRATED CIRCUITS				
IC81	VHI6209B33M-1	J	AE	3.3V Regulator,6209B33M
IC101	VHIIR3R58M/-1	J	AM	RF Signal Processor,IR3R58M
IC201	VHILR37820+-1	J	BK	Endec/Servo/Atrac,LR37820
IC202	RH-IX2960AFZZ	J	BB	16M Bit D-RAM,IX2960AF
IC203	VHI74LVX74T-1	J	AE	D-Flip Flop,74LVX74T
IC254	VHIS89110AC-1	J	AH	OP Amp.,S89110AC
IC271	VHIS89110AC-1	J	AH	OP Amp.,S89110AC
IC301	VHICXD1875T-1	J	BF	Security,CXD1875T
IC303	VHITC7SH08U-1	J	AE	AND Gate,TC7SH08FU
IC311	VHI6219B185M1	J	AE	2.0V Regulator,6219B185
IC351	VHI74ACT08T-1	J	AF	Head Driver,74ACT08T
IC353	VSMCH6616++-1	J	AG	Head Driver,MCH6616
IC354	VHICPH5608/-1	J	AH	Head Driver,CPH5608
IC401	RH-IX0605AW00	J		System Microcomputer, IX0605AW
IC402	RUNTZA002AW01	J	AH	EEPROM,58X2416T
IC431	VHI80820CLN-1	J	AD	Reset,80820CLN
IC501	VHIAK5354VT-1	J	AM	AD Converter/REC AMP., AK5354
IC601	VHILV8223T+-1	J	AY	Motor Driver,LV8223T
IC701	VHINJM2173AP1	J	AL	Mic Amp.,NJM2173AP
IC751	VHI74LCX00MTC	J	AF	Logic,74LCX00M
IC761	VHI74LCX86T-1	J	AF	Logic,74LCX86T
IC771	VHI6219B24M-1	J	AE	2.4V Regulator,6219B24M
IC803	VHI80817CLN-1	J	AE	Reset,80817CLN
IC813	VHI74LX244T-1	J	AH	Logic,74LCX244T
IC821	VHIIR3M17U6-1	J	AQ	1.6V UP Converter/0-2V DOWN Converter,IR3M17U6
IC841	VHI8358B26C-1	J	AH	2.6V DC/DC Converter, 8358B26C
IC842A	VHI882145MH-1	J	AK	4.5V Regulator,882145MH
TRANSISTORS				
Q211	VHIHN1C01FU-1	J	AD	Power Transistor,HN1C01FU
Q212	VSHN7G09FE+-1	J	AD	Digital,FET×1,TR×1,HN7G09FE
Q252	VS2SC5383F+-1	J	AC	Silicon,NPN,2SC5383 F
Q253	VSXP04501++-1	J	AC	Power Transistor,XP04501
Q255	VSXP04313++-1	J	AC	Power Select Charge Drive, XP04313
Q314	VS2SC5383F+-1	J	AC	Silicon,NPN,2SC5383 F
Q331	VS2SB1462J+-1	J	AC	Silicon,PNP,2SB1462 J
Q332	VSKRC404E++-1	J	AB	Digital,NPN,KRC404 E
Q333	VSHN7G08FE+-1	J	AD	Digital,TR×2,HN7G08FE
Q351	VHIFDG312P/-1	J	AD	P-ch Power MOS,FDG312 P
Q493	VHIFDG312P/-1	J	AD	P-ch Power MOS,FDG312 P
Q701	VSXP04113++-1	J	AC	Digital,TR×2,XP04113
Q721	VSKRC404E++-1	J	AB	Digital,NPN,KRC404 E
Q751,752	VSMCH6630++-1	J	AH	FET,MCH6630
Q761,762	VSMCH6630++-1	J	AH	FET,MCH6630
Q801	VS2SJ613+++-1	J	AG	P-MOS FET,2SJ613
Q802	VSMCH3427++-1	J	AF	MOS FET,MCH3427
Q803	VSKRC404E++-1	J	AB	Digital,NPN,KRC404 E
Q804	VSRT1P150U+-1	J	AB	Digital,PNP,RT1P150 U
Q805	VSRT1N250U+-1	J	AB	Digital,NPN,RT1N250 U
Q806	VSXP04501++-1	J	AC	Power Transistor,XP04501
Q809	VSXP04313++-1	J	AC	Power Select Charge Drive, XP04313
Q828	VSECH8601++-1	J	AH	N-ch MOS FET,ECH8601
Q841	VSMCH3409++-1	J	AF	N-ch MOS FET,MCH3409
Q843	VHIFDG312P/-1	J	AD	P-ch Power MOS,FDG312 P
Q861	VSKRC404E++-1	J	AB	Digital,NPN,KRC404 E
Q863	VSMCH3409++-1	J	AF	FET,MCH3409
Q865	VS2SC5383F+-1	J	AC	Silicon,NPN,2SC5383 F
DIODES				
D301	VHE3A6R8LFE-1	J	AD	Zener,3A6.8LFE
D304	VHDDG1M3+++-1	J	AC	Silicon,DG1M3
D351	VHDSBE803//-1	J	AD	Silicon,SBE803
D431	VHDMA111///-1	J	AC	Silicon,MA111
D491	VHE2S6R8FS+-1	J		Zener,2S6.8FS
D493	VHE3A6R8LFE-1	J	AD	Zener,3A6.8LFE
D801	VHDDG1H3+++-1	J	AC	Silicon,DG1H3
D802	VHEMA8039L/-1	J	AB	Zener,MA8039L
D803	VHD1SS388++-1	J	AC	Silicon,1SS388
D811	VHDRB521S30-1	J	AC	Silicon,RB521S30
D828	VHDF10J2E//-1	J	AC	Silicon,F10J2E
D841	VHDDG1H3+++-1	J	AC	Silicon,DG1H3

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
D862	VHDDG1H3+++-1	J	AC	Silicon,DG1H3
COILS				
B301	RCILZ0070AWZZ	J	AB	Tip Power Bead Induction
B302	RCILZA002AWZZ	J	AG	Tip Common Mode Choke Coil
BA01	RCILZ0070AWZZ	J	AB	Tip Power Bead Induction
L100	RCILC0031AWZZ	J	AC	10 µH,Choke
L103	RCILZ0060AWZZ	J	AB	100 MHz,Tip Impeder
L171	RCILC0356AFZZ	J	AC	10 µH
L204	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
L210	RCILC0358AFZZ	J	AC	47 µH,Choke
L401	RCILC0030AWZZ	J	AC	100 µH,Choke
L451~456	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
L457	RCILZ0061AWZZ	J	AB	100 MHz,Tip Impeder
L458	RCILZ0060AWZZ	J	AB	100 MHz,Tip Impeder
L491	VRS-TV2AB330J	J	AA	33 ohms,1/10W
L601~604	RCILC0372AFZZ	J	AC	22 µH,Choke
L610	RCILC0372AFZZ	J	AC	22 µH,Choke
L707,708	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
L711	RCILZ0061AWZZ	J	AB	100 MHz,Tip Impeder
L712,713	VRS-CY1JB102J	J	AA	1 kohm,1/16W
L714	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
L751,752	RCILC0024AWZZ	J	AD	22 µH,Choke
L761,762	RCILC0024AWZZ	J	AD	22 µH,Choke
L811	RCILC0025AWZZ	J	AC	47 µH,Choke
L841	RCILC0029AWZZ	J	AE	47 µH,Choke
L861	RCILC0030AWZZ	J	AC	100 µH,Choke
L862	RCILC0026AWZZ	J	AE	10 µH,Choke
LA02,03	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
LA04	RCILZ0070AWZZ	J	AB	Tip Power Bead Induction
LA11	RCILZ0070AWZZ	J	AB	Tip Power Bead Induction
LA12~15	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
LA16	RCILZ0070AWZZ	J	AB	Tip Power Bead Induction
LA17	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
LA21,22	RCILZ0070AWZZ	J	AB	Tip Power Bead Induction
LA101	RCILZ0070AWZZ	J	AB	Tip Power Bead Induction
VIBRATORS				
XL201	RCRSC0028AFZZ	J	AH	Crystal,33.8688 MHz
XL301	RCRSC0013AWZZ	J	AN	Crystal,12 MHz
XL401	RCRM-0054AWZZ	J	AF	Ceramic,5.000MHz
THERMISTOR				
⚠ PSW1	VHHSMDM110V-1	J	AK	Conductive Restn Switch
CAPACITORS				
C81	RC-KZ0015AWZZ	J	AB	1 µF×2
C100	VCSAFP0JJ106M	J	AE	10 µF,6.3V,Electrolytic,Tantalum
C102	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C103	VCKYCY0JB105K	J	AC	1 µF,6.3V
C106	VCKYCY0JB105K	J	AC	1 µF,6.3V
C107	VCKYCZ1AB333K	J	AB	0.033 µF,10V
C108,109	VCKYCY0JB105K	J	AC	1 µF,6.3V
C110	VCKYCY1AB224K	J	AB	0.22 µF,10V
C111	VCKYCY0JB105K	J	AC	1 µF,6.3V
C112	VCKYCZ1AB333K	J	AB	0.033 µF,10V
C113	VCKYCY0JB105K	J	AC	1 µF,6.3V
C114	VCCCCZ1HH5R0C	J	AB	5 pF (CH),50V
C130,131	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C132,133	VCKYCY1AB224K	J	AB	0.22 µF,10V
C165	VCKYCZ1AB333K	J	AB	0.033 µF,10V
C171	VCSAFA0JJ336M	J	AE	33 µF,6.3V,Electrolytic,Tantalum
C201	VCKYCY0JB105K	J	AC	1 µF,6.3V
C203	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C204	RC-KZ0013AWZZ	J	AC	4.7 µF,6.3V
C205	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C207	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C208	VCKYCY0JB105K	J	AC	1 µF,6.3V
C209	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C211,212	VCCCCZ1HH5R0C	J	AB	5 pF (CH),50V
C214	RC-KZ0015AWZZ	J	AB	1 µF×2
C215,216	VCKYCY0JB105K	J	AC	1 µF,6.3V
C221	VCCCCZ1HH220J	J	AA	22 pF (CH),50V
C222	VCKYCY0JB105K	J	AC	1 µF,6.3V
C250	RC-EZ0109AWZZ	J	AE	220 µF,4V,Electrolytic
C253,254	VCKYCZ1AB104K	J	AB	0.1 µF,10V

NO.	PART CODE	★	PRICE RANK	DESCRIPTION
C270	VCKYCY0JB105K	J	AC	1 µF,6.3V
C272~274	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C301	RC-KZ0015AWZZ	J	AB	1 µF×2
C303	RC-KZ0015AWZZ	J	AB	1 µF×2
C305	VCKYCY0JB105K	J	AC	1 µF,6.3V
C306	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C307	VCCCCZ1HH330J	J	AB	33 pF (CH),50V
C310	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C313,314	VCCCCZ1HH8R0D	J	AB	8 pF (CH),50V
C315	VCCCCZ1HH221J	J	AB	220 pF (CH),50V
C331	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C332	VCKYCY0JB105K	J	AC	1 µF,6.3V
C351	VCCCCY1HH270J	J	AA	27 pF (CH),50V
C353	VCKYCY0JB105K	J	AC	1 µF,6.3V
C357	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C361	VCKYTV1HB393K	J	AB	0.039 µF,50V
C401	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C402	VCSAPR0JJ106M	J	AD	10 µF,6.3V,Electrolytic,Tantalum
C404	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C431	VCKYCY1AB474K	J	AC	0.47 µF,10V
C451	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C454	VCKYCZ1HB222K	J	AB	0.0022 µF,50V
C493	VCKYCZ1AB473K	J	AB	0.047 µF,10V
C503,504	VCSAPR1AJ335M	J	AD	3.3 µF,10V,Electrolytic,Tantalum
C509,510	VCKYCY0JF225Z	J	AC	2.2 µF,6.3V
C511	VCKYCZ1HB102K	J	AB	0.001 µF,50V
C521	RC-KZ0015AWZZ	J	AB	1 µF×2
C601~604	RC-KZ0013AWZZ	J	AC	4.7 µF,6.3V
C608	VCKYCY1AB474K	J	AC	0.47 µF,10V
C652	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C701	RC-KZ0015AWZZ	J	AB	1 µF×2
C703	VCSAPR1AJ335M	J	AD	3.3 µF,10V,Electrolytic,Tantalum
C705	VCSAPR1AJ335M	J	AD	3.3 µF,10V,Electrolytic,Tantalum
C707,708	VCSATK0JJ476M	J	AD	47 µF,6.3V,Electrolytic,Tantalum
C709,710	VCKYCY0JB105K	J	AC	1 µF,6.3V
C715	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C717	VCKYCY1CB104K	J	AB	0.1 µF,16V
C723,724	VCKYCZ1HB102K	J	AB	0.001 µF,50V
C731	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C737,738	RC-KZ0013AWZZ	J	AC	4.7 µF,6.3V
C739,740	VCKYCZ1EB472K	J	AB	0.0047 µF,25V
C750	VCKYCY0JB105K	J	AC	1 µF,6.3V
C751,752	VCKYCY1AB474K	J	AC	0.47 µF,10V
C760	VCKYCY0JB105K	J	AC	1 µF,6.3V
C767	RC-KZ0013AWZZ	J	AC	4.7 µF,6.3V
C767A	RC-KZ0013AWZZ	J	AC	4.7 µF,6.3V
C768	RC-KZ0013AWZZ	J	AC	4.7 µF,6.3V
C768A	RC-KZ0013AWZZ	J	AC	4.7 µF,6.3V
C771,772	VCKYTV1CB474K	J	AC	0.47 µF,16V
C773	RC-KZ0015AWZZ	J	AB	1 µF×2
C783,784	VCKYTV1CB474K	J	AC	0.47 µF,16V
C801	RC-KZ0013AWZZ	J	AC	4.7 µF,6.3V
C801A	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C802	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C809	VCKYCZ1HB222K	J	AB	0.0022 µF,50V
C811,812	VCKYCY0JB105K	J	AC	1 µF,6.3V
C813	RC-SZ0010AWZZ	J	AH	47 µF,6.3V,Electrolytic
C814	VCKYCY0JB105K	J	AC	1 µF,6.3V
C815	RC-SZ0013AWZZ	J	AF	10 µF,6.3V,Tantalume
C818	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C822	VCKYCY0JB105K	J	AC	1 µF,6.3V
C823	VCCCCY1HH470J	J	AA	47 pF (CH),50V
C824	VCKYCZ1AB473K	J	AB	0.047 µF,10V
C825	VCCCCZ1HH271J	J	AB	270 pF (CH),50V
C831	VCKYCY1AB334K	J	AC	0.33 µF,10V
C839A	VCKYCY0JB105K	J	AC	1 µF,6.3V
C840A	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C841,842	RC-SZ0010AWZZ	J	AH	47 µF,6.3V,Electrolytic
C850	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C853	VCCCCY1HH181J	J	AA	180 pF (CH),50V
C854	VCCCCY1HH221J	J	AA	220 pF (CH),50V
C861	RC-KZ0013AWZZ	J	AC	4.7 µF,6.3V
C863	RC-SZ0001AWZZ	J	AG	22 µF,6.3V,Electrolytic
C863A	VCSATA1AJ106M	J	AE	10 µF,10V,Electrolytic,Tantalume
C864~867	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C870	VCKYCZ1AB333K	J	AB	0.033 µF,10V
C891	VCKYCZ1AB104K	J	AB	0.1 µF,10V
C901	VCKYCZ1EB472K	J	AB	0.0047 µF,25V
C907	VCKYCZ1HB222K	J	AB	0.0022 µF,50V
C908,909	VCKYCY0JB105K	J	AC	1 µF,6.3V
C911,912	VCKYCY1AB224K	J	AB	0.22 µF,10V
C913	RC-KZ0015AWZZ	J	AB	1 µF×2

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
CA01,02	VCKYCY1CB104K	J	AB	0.1 µF,16V
CA11	VCKYCY1CB104K	J	AB	0.1 µF,16V
CA15	VCKYCY1CB103K	J	AA	0.01 µF,16V
CA21	VCKYCY0JB105K	J	AC	1 µF,6.3V
CA24	VCKYCY0JB105K	J	AC	1 µF,6.3V
CA28	VCKYCY1CB104K	J	AB	0.1 µF,16V
CA31	VCKYCY1CB104K	J	AB	0.1 µF,16V
CA45,46	VCKYCY1CB104K	J	AB	0.1 µF,16V
CA51,52	VCKYCY1CB104K	J	AB	0.1 µF,16V
CA61	VCKYCY1CB104K	J	AB	0.1 µF,16V
CA71,72	VCCCCY1HH101J	J	AA	100 pF (CH),50V
CA73	VCKYCY1AB104K	J	AC	0.1 µF,10V

RESISTORS

	VRS-CY1JB000J	J	AA	0 ohm,Jumper,0.8×1.55mm,Green
	VRS-CZ1JB000J	J	AB	0 ohm,Jumper,0.5×1.0mm
R85	VRS-CZ1JB474J	J	AB	470 kohms,1/16W
R111	VRS-CZ1JB123J	J	AB	12 kohms,1/16W
R112	VRS-CZ1JB224J	J	AA	220 kohms,1/16W
R131	VRS-CZ1JB154D	J	AA	150 kohms,1/16W
R132	VRS-CZ1JB105D	J	AA	1 Mohm,1/16W
R133	VRS-CZ1JB154D	J	AA	150 kohms,1/16W
R134	VRS-CZ1JB105D	J	AA	1 Mohm,1/16W
R135	VRS-CZ1JB473D	J	AA	47 kohms,1/16W
R136	VRS-CZ1JB394D	J	AA	390 kohms,1/16W
R137	VRS-CZ1JB473D	J	AA	47 kohms,1/16W
R138	VRS-CZ1JB394D	J	AA	390 kohms,1/16W
R139	VRS-CZ1JB393J	J	AB	39 kohms,1/16W
R140	VRS-CZ1JB564J	J	AA	560 kohms,1/16W
R161	VRS-CZ1JB122J	J	AB	1.2 kohms,1/16W
R204	VRS-CZ1JB102J	J	AB	1 kohm,1/16W
R205	VRS-CZ1JB273J	J	AA	27 kohms,1/16W
R206	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R207	VRS-CZ1JB681J	J	AB	680 ohms,1/16W
R212	VRS-CZ1JB103J	J	AA	10 kohm,1/16W
R214	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R216	VRS-CZ1JB470J	J	AB	47 ohms,1/16W
R222	VRS-CZ1JB105J	J	AB	1 Mohm,1/16W
R243~245	VRS-CZ1JB331J	J	AB	330 ohms,1/16W
R253	VRS-CZ1JB272D	J	AA	2.7 kohms,1/16W
R254	VRS-CZ1JB562J	J	AB	5.6 kohms,1/16W
R255	VRS-CZ1JB473D	J	AA	47 kohms,1/16W
R256	VRS-CZ1JB182J	J	AA	1.8 kohms,1/16W
R257	VRS-CZ1JB103J	J	AA	10 kohm,1/16W
R258	VRS-CZ1JB563J	J	AA	56 kohms,1/16W
R259	VRS-CZ1JB333J	J	AB	33 kohms,1/16W
R272	VRS-CZ1JB474D	J	AA	470 kohms,1/16W
R273	VRS-CZ1JB473D	J	AA	47 kohms,1/16W
R274	VRS-CZ1JB563D	J	AA	56 kohms,1/16W
R275	VRS-CZ1JB153D	J	AA	15 kohms,1/16W
R276	VRS-CZ1JB124D	J	AB	120 kohms,1/16W
R277	VRS-CZ1JB222J	J	AB	2.2 kohms,1/16W
R278	VRS-CZ1JB220J	J	AB	22 ohms,1/16W
R280	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R282	VRS-CZ1JB564J	J	AA	560 kohms,1/16W
R284	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R286	VRS-CZ1JB102J	J	AB	1 kohm,1/16W
R303	VRS-CZ1JB332J	J	AB	3.3 kohms,1/16W
R305	VRS-CZ1JB473J	J	AA	47 kohms,1/16W
R307	VRS-CZ1JB474J	J	AB	470 kohms,1/16W
R311	VRS-CZ1JB474J	J	AB	470 kohms,1/16W
R318,319	VRS-CZ1JB103J	J	AA	10 kohm,1/16W
R320	VRS-CZ1JB272J	J	AB	2.7 kohms,1/16W
R331	VRS-CZ1JB392J	J	AB	3.9 kohms,1/16W
R332	VRS-CZ1JB151J	J	AA	150 ohms,1/16W
R339,340	VRS-CZ1JB270J	J	AA	27 ohms,1/16W
R342	VRS-CZ1JB152J	J	AB	1.5 kohms,1/16W
R351	VRS-CY1JB2R2J	J	AA	2.2 ohms,1/16W
R353	VRS-CZ1JB474J	J	AB	470 kohms,1/16W
R361	VRS-TV2AB8R2J	J	AA	8.2 ohms,1/10W
R401	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R402	VRS-CZ1JB223J	J	AB	22 kohms,1/16W
R403	VRS-CZ1JB102J	J	AB	1 kohm,1/16W
R404	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R405	VRS-CZ1JB103J	J	AA	10 kohm,1/16W
R406	VRS-CZ1JB223J	J	AB	22 kohms,1/16W
R411	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R412	VRS-CZ1JB153J	J	AA	15 kohms,1/16W
R416	VRS-CG1JF102J	J	AC	1 kohm,1/16W
R422	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R425,426	VRS-CZ1JB223J	J	AB	22 kohms,1/16W

NO.	PART CODE	★	PRICE RANK	DESCRIPTION
R431	VRS-CZ1JB334J	J	AA	330 kohms,1/16W
R442	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R443	VRS-CZ1JB334J	J	AA	330 kohms,1/16W
R451	VRS-CZ1JB123J	J	AB	12 kohms,1/16W
R452	VRS-CZ1JB333J	J	AB	33 kohms,1/16W
R453	VRS-CZ1JB222J	J	AB	2.2 kohms,1/16W
R457	VRS-CZ1JB561J	J	AB	560 ohms,1/16W
R461,462	VRS-CZ1JB223J	J	AB	22 kohms,1/16W
R464	VRS-CZ1JB224J	J	AA	220 kohms,1/16W
R495	VRS-CZ1JB334J	J	AA	330 kohms,1/16W
R496	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R501~504	VRS-CZ1JB123J	J	AB	12 kohms,1/16W
R511	VRS-CZ1JB102J	J	AB	1 kohm,1/16W
R603,604	VRS-CZ1JB1R0J	J	AA	1 ohm,1/16W
R700	VRS-CZ1JB471J	J	AA	470 ohms,1/16W
R701	VRS-CZ1JB334J	J	AA	330 kohms,1/16W
R703,704	VRS-CZ1JB682J	J	AB	6.8 kohms,1/16W
R717	VRS-CZ1JB471J	J	AA	470 ohms,1/16W
R727	VRS-CZ1JB224J	J	AA	220 kohms,1/16W
R737,738	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R751~754	VRS-CZ1JB105J	J	AB	1 Mohm,1/16W
R773,774	VRS-TV2AB150J	J	AA	15 ohms,1/10W
R781,782	VRS-CZ1JB272J	J	AB	2.7 kohms,1/16W
R801	VRS-CZ1JB102J	J	AB	1 kohm,1/16W
R802	VRS-CZ1JB473J	J	AA	47 kohms,1/16W
R803	VRS-CZ1JB333J	J	AB	33 kohms,1/16W
R805	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R806	VRS-CZ1JB123J	J	AB	12 kohms,1/16W
R807	VRS-CZ1JB393J	J	AB	39 kohms,1/16W
R809	VRS-CZ1JB103J	J	AA	10 kohm,1/16W
R810	RR-DZ0010AWZZ	J	AB	Resistance Array
R812	VRS-CZ1JB683D	J	AA	68 kohms,1/16W
R813	VRS-CZ1JB563D	J	AA	56 kohms,1/16W
R814	VRS-CZ1JB273D	J	AA	27 kohms,1/16W
R815	VRS-CZ1JB393D	J	AA	39 kohms,1/16W
R816	VRS-CZ1JB272J	J	AB	2.7 kohms,1/16W
R818	VRS-CZ1JB564J	J	AA	560 kohms,1/16W
R819	VRS-CZ1JB223J	J	AB	22 kohms,1/16W
R820	VRS-CZ1JB274J	J	AB	270 kohms,1/16W
R821	VRS-CZ1JB102J	J	AB	1 kohm,1/16W
R822	VRS-CZ1JB125J	J	AA	1.2 Mohms,1/16W
R823	VRS-CZ1JB154D	J	AA	150 kohms,1/16W
R824	VRS-CZ1JB184J	J	AB	180 kohms,1/16W
R825	VRS-CZ1JB562J	J	AB	5.6 kohms,1/16W
R826,827	VRS-CZ1JB273D	J	AA	27 kohms,1/16W
R828	VRS-CY1JB1R0J	J	AA	1 ohm,1/16W
R831	VRS-CZ1JB394D	J	AA	390 kohms,1/16W
R832	VRS-CZ1JB684D	J	AA	680 kohms,1/16W
R833	VRS-CZ1JB394J	J	AA	390 kohms,1/16W
R841	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R850	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R852	VRS-CZ1JB221J	J	AA	220 ohms,1/16W
R855,856	VRS-CZ1JB474D	J	AA	470 kohms,1/16W
R861	VRS-CZ1JB102J	J	AB	1 kohm,1/16W
R862	VRS-CZ1JB474D	J	AA	470 kohms,1/16W
R865	VRS-CZ1JB104J	J	AA	100 kohm,1/16W
R866	VRS-CZ1JB273J	J	AA	27 kohms,1/16W
R867	VRS-CZ1JB683J	J	AB	68 kohms,1/16W
R870	VRS-CZ1JB334J	J	AA	330 kohms,1/16W
R881,882	VRS-CY1JB1R8J	J	AA	1.8 ohms,1/16W
R891	VRS-CZ1JB103J	J	AA	10 kohm,1/16W
R894	VRS-CZ1JB105J	J	AB	1 Mohm,1/16W
R906	VRS-CZ1JB563J	J	AA	56 kohms,1/16W
R907,908	VRS-CZ1JB334J	J	AA	330 kohms,1/16W
R910	VRS-CZ1JB333J	J	AB	33 kohms,1/16W
RA02	VRS-CY1JB272F	J	AA	2.7 kohms,1/16W
RA03	VRS-CY1JB332F	J	AA	3.3 kohms,1/16W
RA04	VRS-CY1JB392F	J	AA	3.9 kohms,1/16W
RA05	VRS-CY1JB562F	J	AA	5.6 kohms,1/16W
RA06	VRS-CY1JB682F	J	AA	6.8 kohms,1/16W
RA07	VRS-CY1JB123F	J	AA	12 kohms,1/16W
RA08,09	VRS-CY1JB222F	J	AA	2.2 kohms,1/16W
RA10	VRS-CY1JB183F	J	AA	18 kohms,1/16W
RA11	VRS-CY1JB393F	J	AA	39 kohms,1/16W
RA12	VRS-CY1JB333J	J	AA	33 kohms,1/16W
RA13	VRS-CY1JB243F	J	AA	24 kohms,1/16W
RA14	VRS-CY1JB183F	J	AA	18 kohms,1/16W
RA16	VRS-CY1JB124F	J	AA	120 kohms,1/16W
RA21	VRS-CY1JB102J	J	AA	1 kohm,1/16W
RA22	VRS-CY1JB223J	J	AA	22 kohms,1/16W
RA23	VRS-CY1JB683J	J	AA	68 kohms,1/16W
RA24	VRS-CY1JB100J	J	AA	10 ohm,1/16W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION

OTHER CIRCUITRY PARTS

CN101	QCNCW046XAWZZ	J	AM	Socket,22Pin
CN451	QCNCW050HAWZZ	J	AF	Socket,8Pin
CN601	QCNCW838LAFZZ	J	AF	Socket,11Pin
CNA01	QCNCW804GAFZZ	J	AD	Socket,7Pin
CR101	QCNCW065VAWZZ	J	AN	Socket,20Pin
CR102	QCNCM065VAWZZ	J	AP	Plug,21Pin
CR103,104	QCNCW804XAFZZ	J	AF	Socket,22Pin
⚠ F301	QFS-L631AAWNZ	J	AE	Square Tip Type Fuse,630mA
FFCA01	QCNWN2664AWZZ	J	AD	Flat Cable,22Pin
J702	QJAKM0026AWZZ	J	AE	Jack,Mic In
J703	QJAKM0015AWZZ	J	AL	Jack,Remote Control/Headphones
JA01	VHLGP1FD210-1	J	AM	Jack,Optical/Line In
JA02	QJAKM0027AWZZ	J	AD	Jack,Audio Output
JA03	QJAKZ0019AWZZ	J	AG	Jack,USB
JA04	QJAKC0009AWZZ	J	AE	Jack,DC IN
JA05	QJAKM0021AWZZ	J	AD	Jack,Headphones
M901	RMOTV0064AWZZ	J	AT	Motor Ass'y [Spindle]
M902	RMOTS0002AWZZ	J	AT	Motor Ass'y [Sled]
M903	RMOTV0053AWZZ	J	AR	Motor Ass'y [Lift]
SW401	QSW-M0010AWZZ	J	AE	Switch,Key Type [Eject]
SW402	QSW-M0015AWZZ	J	AF	Switch,Push Type [Open]
SW901	QSW-M0013AWZZ	J	AF	Switch,Push Type [Protect]
SWA01	QSW-K0237AFZZ	J	AC	Switch,Key Type [Rec]
SWA02	QSW-K0237AFZZ	J	AC	Switch,Key Type [Play/Pause]
SWA03	QSW-K0237AFZZ	J	AC	Switch,Key Type [Menu]
SWA04	QSW-K0237AFZZ	J	AC	Switch,Key Type [Enter/USB]
SWA05	QSW-K0237AFZZ	J	AC	Switch,Key Type [Skip Up]
SWA06	QSW-K0237AFZZ	J	AC	Switch,Key Type [Volume Up]
SWA07	QSW-K0237AFZZ	J	AC	Switch,Key Type [Power/Stop]
SWA08	QSW-K0237AFZZ	J	AC	Switch,Key Type [Volume Down]
SWA09	QSW-K0237AFZZ	J	AC	Switch,Key Type [Skip Down]
SWA10	QSW-K0237AFZZ	J	AC	Switch,Key Type [Erase]
SWA11	QSW-S0036AWZZ	J	AF	Switch,Slide Type [Speaker Output Selector]
SWA15	QSW-K0237AFZZ	J	AC	Switch,Key Type [Disp/Bass]
SWA16	QSW-K0237AFZZ	J	AC	Switch,Key Type [Mode/Charge]

MD MECHANISM PARTS

1	LANGK0211AWZZ	J	AC	Guide,Shaft
2	LCHSM0189AWM1	J	AH	Main Chassis Ass'y
3	LHLDXA002AWM1	J	AH	Cartridge Holder Ass'y
4	MLEVF0087AWFW	J	AC	Lever,Eject Protect
5	MLEVF0110AWFW	J	AC	Lever,Lift Link
6	MLEVF0111AWFW	J	AC	Lever,Lift Move
7	MLEVF0112AWFW	J	AC	Lever,Lift
8	MSPRP0060AWFJ	J	AB	Spring,Thrust
9	MSPRP0067AWFJ	J	AB	Spring,Drive Grip
10	MSPRT0058AWFJ	J	AB	Spring,Eject Lever
11	NBRGC0004AWZZ	J	AB	Metal
12	NGERH0164AWZZ	J	AC	Gear,Drive
13	NGERH0165AWZZ	J	AB	Wheel,Drive
14	NSFTD0011AWZZ	J	AG	Drive Screw
15	QPWBH0026AWZZ	J	AG	Mechanism Flexible PWB
16	RCILH0008AWM2	J	AQ	Magnetic Head Ass'y
⚠ 17	92LHPM282	J	BS	Optical Pickup Unit
501	LX-BZ0049AWZZ	J	AB	Screw,ø1.4×1.8mm
502	LX-BZ0050AWZZ	J	AB	Screw,ø1.4×2.5mm
503	LX-BZ0059AWZZ	J	AB	Screw,ø1.4×1.8mm
504	LX-BZ0072AWZZ	J	AB	Screw,ø1.4×3.3mm
505	LX-BZ0079AWZZ	J	AB	Screw,ø1.4×1.2mm
506	LX-BZ0823AFZZ	J	AA	Screw,ø1.4×1.2mm
507	LX-WZ9290AFZZ	J	AA	Washer,ø0.8×ø2.4×0.2mm
M901	RMOTV0064AWZZ	J	AT	Motor Ass'y [Spindle]
M902	RMOTS0002AWZZ	J	AT	Motor Ass'y [Sled]
M903	RMOTV0053AWZZ	J	AR	Motor Ass'y [Lift]

CABINET PARTS

201	GCABA3032AWM1	J	BD	Top Cabinet Ass'y [(S)]
201	GCABA3032AWM2	J		Top Cabinet Ass'y [(BK)]
202	GCAB-1245AWSA	J	AM	Center Cabinet
203	GCABB3032AWSA	J	AY	Bottom Cabinet [(S) For Europe/U.K./Sweden/ Hong Kong/Korea]
203	GCABB3032AWSB	J		Bottom Cabinet [(BK) For Europe/U.K./Sweden/ Hong Kong]

NO.	PART CODE	★	PRICE RANK	DESCRIPTION
203	GCABB3033AWSA	J		Bottom Cabinet [(S) Except for Europe/U.K./ Sweden/Hong Kong/Korea]
203	GCABB3033AWSB	J		Bottom Cabinet [(BK) Except for Europe/U.K./ Sweden/Hong Kong]
204	GCOVH1038AWZZ	J	AB	Cover,EJECT Frame
205	GCOVH1040AWZZ	J	AD	Cover,Terminal
206	GFTAB1054AWSA	J	AF	Cover,Battery [(S)]
206	GFTAB1054AWSB	J	AF	Cover,Battery [(BK)]
207	HDECQ1065AWSA	J	AK	Decoration Plate,Knob
208	HINDP0011AWSA	J	AC	Cover,LED
209	JKNBZ0964AWSA	J	AE	Knob,Eject
210	JKNBZ0965AWSA	J	AK	Button,Operation
211	LANGT0072AWFW	J	AB	Bracket,Center Cabinet
212	LANGT0157AWFW	J	AD	Bracket,Button
213	LANGZ0063AWM1	J	AG	Battery Terminal Bracket Ass'y,+
214	LHLDZ1476AWZZ	J	AD	Holder,Battery
215	LHLDZ1477AWZZ	J	AD	Holder,Terminal
216	LHLDZ3037AWM1	J	AR	Main Frame Ass'y
217	LHLDZ3039AWM1	J	AK	Eject Frame Ass'y
218	MSPRP0066AWFQ	J	AG	Spring,Battery Terminal -
219	PCUSG0159AWZZ	J	AB	Cushion,MD Lid
220	PGUMS0020AWZZ	J	AB	Cushion,Battery
221	PSHETA001AWZZ	J	AA	Sheet,Battery +
222	PSHET0100AWZZ	J	AA	Sheet,Headphones Jack
223	PSHET0146AWZZ	J	AC	Sheet,Insulation
224	PSHET0147AWZZ	J	AB	Sheet,PWB
225	PSHET0148AWZZ	J	AB	Sheet,PIC
227	PSHEZ0209AWZZ	J	AC	Sheet,Decoration Panel
228	QTANB9046AWFQ	J	AC	Battery Terminal,+
229	QTANB9047AWFQ	J	AC	Battery Terminal,-
230	RUNTK0028AWZZ	J	AN	Operation Button Flexible PWB Ass'y
232	TCAUSA001AWZZ	J	AB	Label,Class 3B
233	PSHEZA023AWZZ	J	AA	Sheet,Operation Button Flexible PWB Ass'y
234	PSHEZA009AWZZ	J	AA	Sheet, MD Mechanism
601	LX-BZ0047AWFC	J	AB	Screw,ø1.4×1.5mm
602	LX-BZ0047AWFC	J	AB	Screw,ø1.4×1.5mm [(S)]
602	LX-BZ0047AWF6	J	AD	Screw,ø1.4×1.5mm [(BK)]
603	LX-BZ0048AWFN	J	AC	Screw,ø1.4×2.5mm

MULTI-LINK STATION PARTS

101	GCABA1357AWSA	J	AN	Top Cabinet [(S)]
101	GCABA1357AWSB	J	AM	Top Cabinet [(BK)]
102	GCABB1365AWSA	J	AG	Bottom Cabinet
103	GLEGG0001AWZZ	J	AB	Leg Cushion
104	HDECQ1066AWSA	J	AH	Guide
105	HDECQ1067AWSA	J	AL	Decoration Panel
106	JKNBZ0966AWSA	J	AM	Button,Operation
107	JKNBZ0967AWSA	J	AC	Button,Rec
108	LHLDZ1478AWZZ	J	AC	Holder,Multi-Link Station B PWB
109	LHLDZ1479AWZZ	J	AC	Hook,Lock
110	LHLDZ1480AWZZ	J	AE	Holder,LCD
111	MSPRC0043AWFJ	J	AA	Spring,Multi-Link Station B PWB
112	PSHEZA002AWZZ	J	AF	Sheet,Shield
113	PSHEZ0210AWZZ	J	AC	Sheet,Decoration Panel
114	RUNTZ0052AWZZ	J	BA	LCD Unit
115	MSPRPA001AWFN	J		Spring,Earth
401	XEBSN20P05000	J	AA	Screw,ø2×5mm

ACCESSORIES/PACKING PARTS

1	GCASZ0005AWSA	J	AS	Battery Case
2	PCOVW1015AWZZ	J	AC	Battery Carrying Case
3	QCNWG0029AWZZ	J	AK	Connecting Cord
4	QCNWG0069AWZZ	J	AS	USB Cable
5	QCNWG0422AFZZ	J	AQ	Opticel Cable
⚠ 6	RADPA5067AWZZ	J		AC Adaptor
⚠ 6	RADPA5068AWZZ	J		AC Adaptor
⚠ 6	RADPA5069AWZZ	J		AC Adaptor
⚠ 6	RADPA7065AWZZ	J	AY	AC Adapter
⚠ 6	RADPA8066AWZZ	J	AY	AC Adaptor
7	RPHOH0021AWZZ	J	AU	Earphones
8	RPHOH0022AWZZ	J	BE	Earphones
9	RRMCW0030AWSA	J	BN	Remote Control
10	SPAKAA021AWZZ	J		Packing Add.
11	SPAKCA091AWZZ	J		Packing Case [(BK)]
11	SPAKC1722AWZZ	J		Packing Case [(S)]

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
12	SPAKZ0490AWZZ	J	AC	Spacer,Operation Manual [Except for Europe/Sweden/ (S) For Korea]
13	SSAKA0015AWZZ	J	AB	Polyethylene Bag,Multi-Link Station
14	TCADS0005AWZZ	J	AB	Service Card [For U.K.Only]
15	TCAUHA002AWZZ	J		MG Caution [Except for Europe/U.K./ Sweden/(S) For Korea]
15	TCAUH0099AWZZ	J	AD	MG Caution [For Europe/U.K./Sweden]
16	TCAUHA003AWZZ	J		Install Caution
17	TCAUZA005AWZZ	J		License Form [Except for Europe/U.K./ Sweden/(S) For Korea]
17	TCAUZ0177AWZZ	J	AD	License Form [For Europe/U.K./Sweden]
18	SSAKAA002AWZZ	J		Polyethylene Bag
19	TGANE0013AWZZ	J	AC	Warranty Card [For U.K.Only]
20	TINSE0568AWZZ	J	AG	Operation Manual [For U.K.]
20	TINSQ0005AWZZ	J		Operation Manual [Except for Europe/U.K./ Sweden/(S) Except for Korea]
20	TINSZ0986AWZZ	J	AR	Operation Manual [For Sweden]
20	TINSZ0987AWZZ	J	AQ	Operation Manual [For Europe]
20	TINSZ0988AWZZ	J		Operation Manual [(S) For Korea]
21	TINSE0553AWZZ	J	AE	Operation Manual (Net MD) [For U.K.]
21	TINSQ0004AWZZ	J		Operation Manual (Net MD) [Except for Europe/U.K./ Sweden/(S) Except for Korea]
21	TINSZ0963AWZZ	J	AM	Operation Manual (Net MD) [For Sweden]
21	TINSZ0975AWZZ	J	AK	Operation Manual (Net MD) [For Europe]
21	TINSZ0976AWZZ	J		Operation Manual (Net MD) [(S) For Korea]
22	TINSE0572AWZZ	J	AD	Quick Guide [For U.K.Only]
23	TLABMA009AWZZ	J		Label,Feature (for Set) [(BK)]
23	TLABM0193AWZZ	J		Label,Feature (for Set) [(S)]
24	TLABZ1379AWZZ	J	AC	Label,Feature (for Packing Case)
25	UBAGC0007AWSB	J	AF	Carrying Case
26	UBATM0009AWSA	J	AY	Rechargeable Battery
27	UDSKA0004AWZZ	J	AP	CD-ROM [For Europe/U.K./Sweden]
27	UDSKA0006AWZZ	J		CD-ROM [Except for Europe/U.K./ Sweden/(S) For Korea]
28	92LBAG1770A	J	AB	Polyethylene Bag,AC Adaptor
29	TLABG0002AWZZ	J	AB	Label,Hong Kong [For Hong Kong Only]
30	TLABS0405AWZZ	J		Label,CPA [Except for Europe/U.K./ Sweden/Hong Kong/(S) Except for Korea Only]

P.W.B. ASSEMBLY (Not Replacement Item)

PWB-A	92LPWB5593MDSS	J	—	Main
PWB-B1,2	92LPWB5484CHRS	J	—	Multi-Link Station A/Multi-Link Station B

OTHER SERVICE PARTS

QCNWN6936AFZZ	J	AU	Performance Test (Extension Cable for Motors)
RUNTK0613AFZZ	J	AV	Performance Test (Extension Relay PWB for Motors)
UDSKM0001AFZZ	J	AZ	Recording Mini Disc
88GMMD-110	J	BV	High Reflection Disc MMD-110 (TEAC Test MD)
88GMMD-213A	J	BT	Low Reflection Disc MMD-213A (TEAC Test MD)

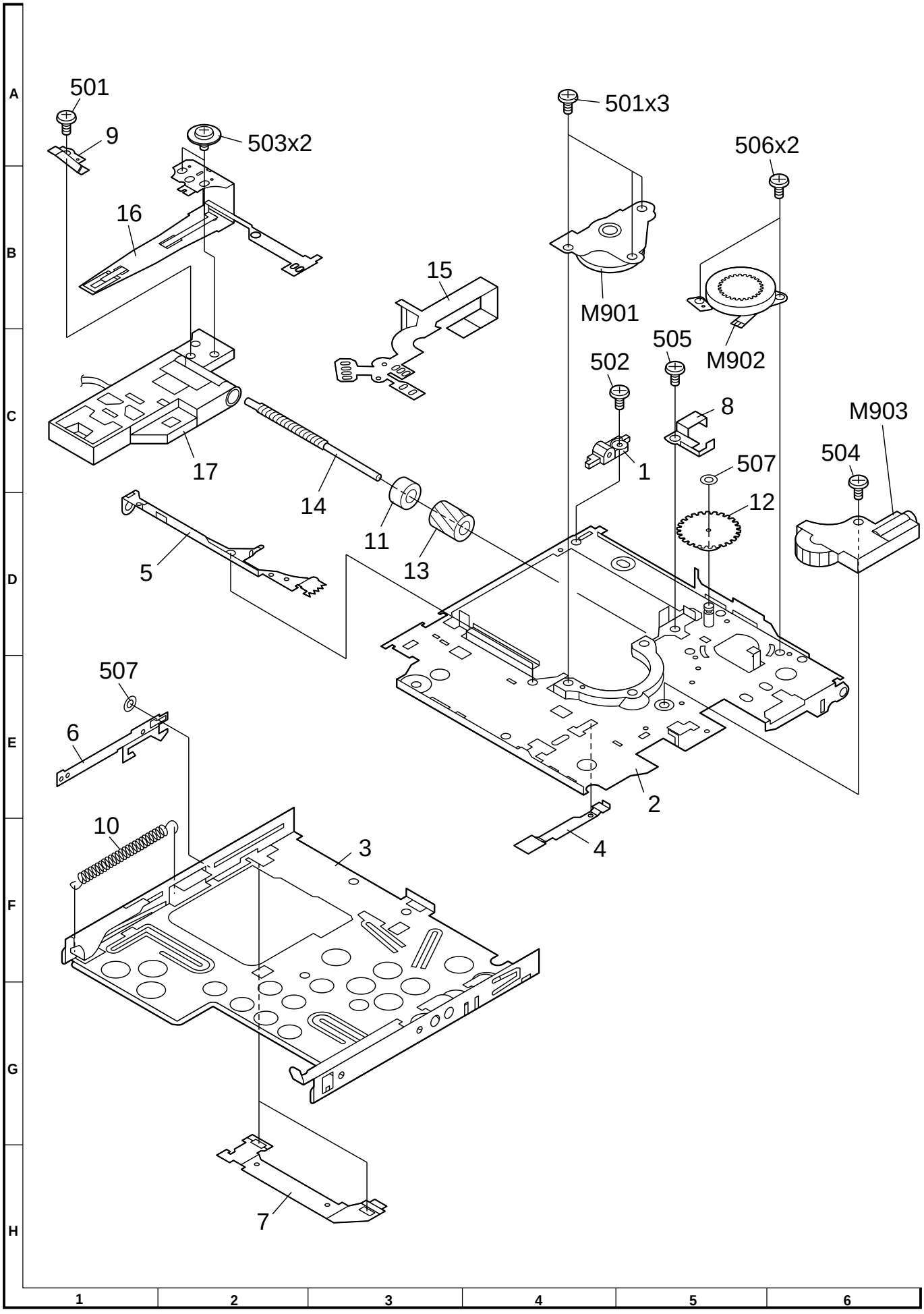


Figure 5 MD MECHANISM EXPLODED VIEW

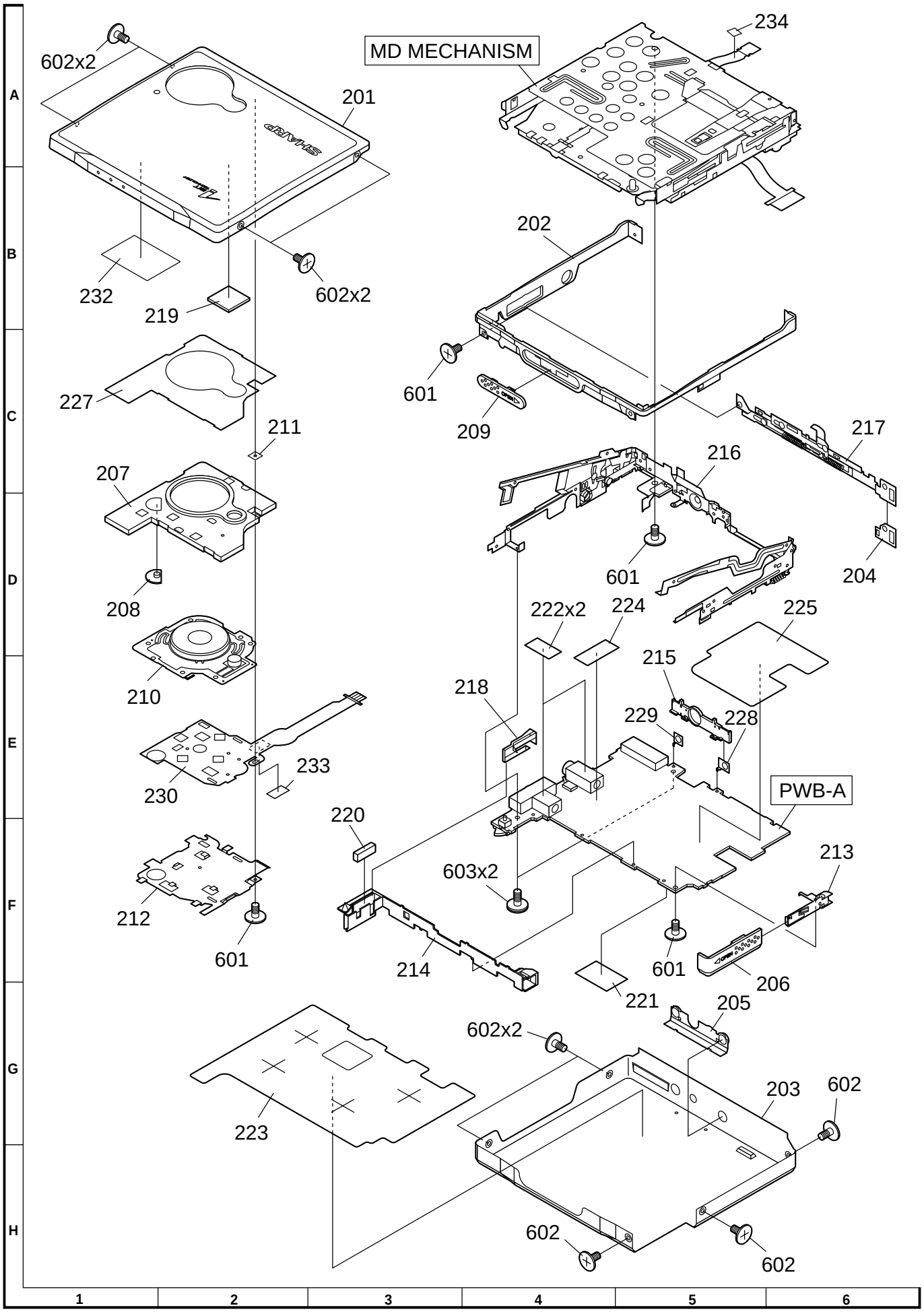


Figure 6 CABINET EXPLODED VIEW

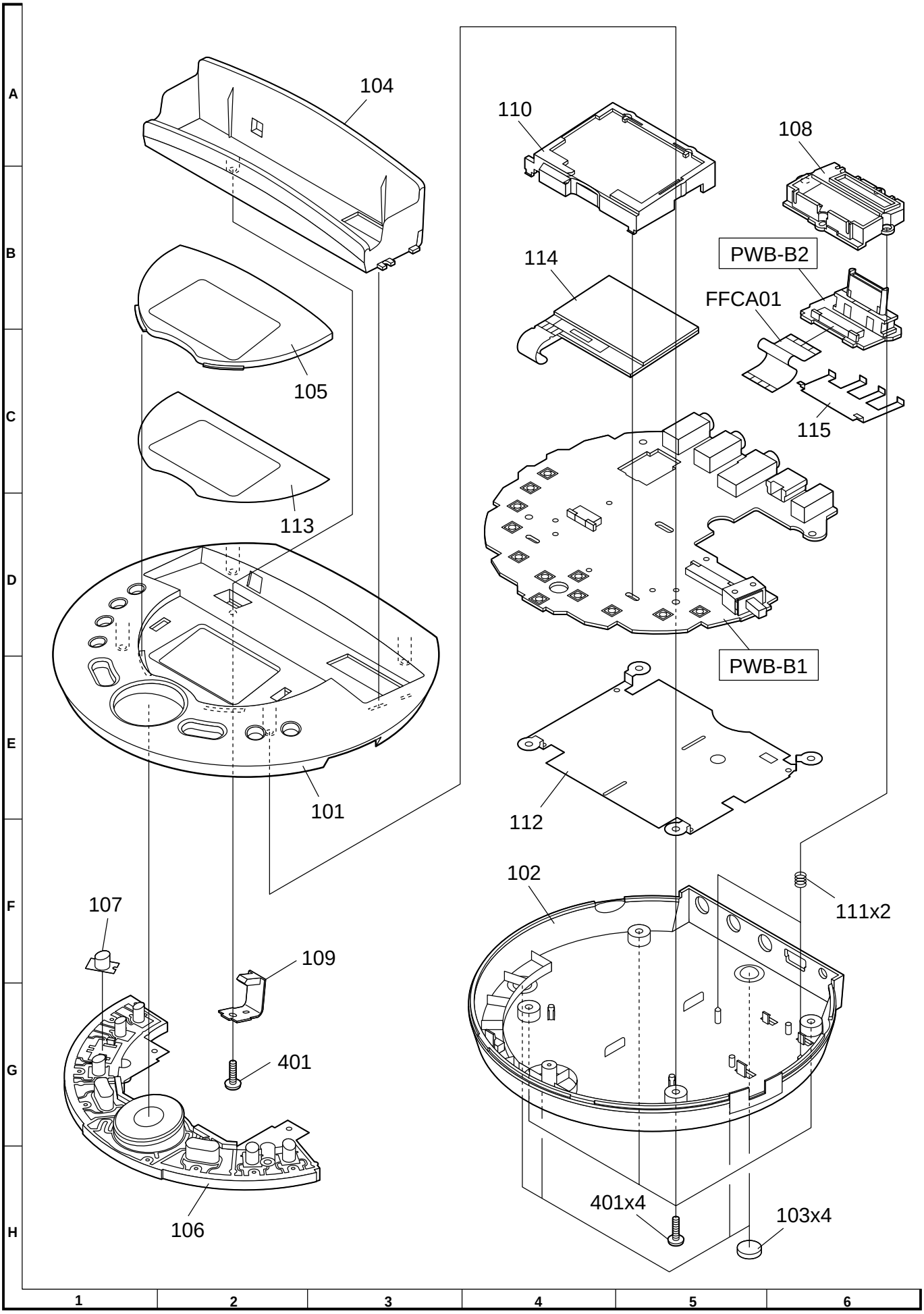
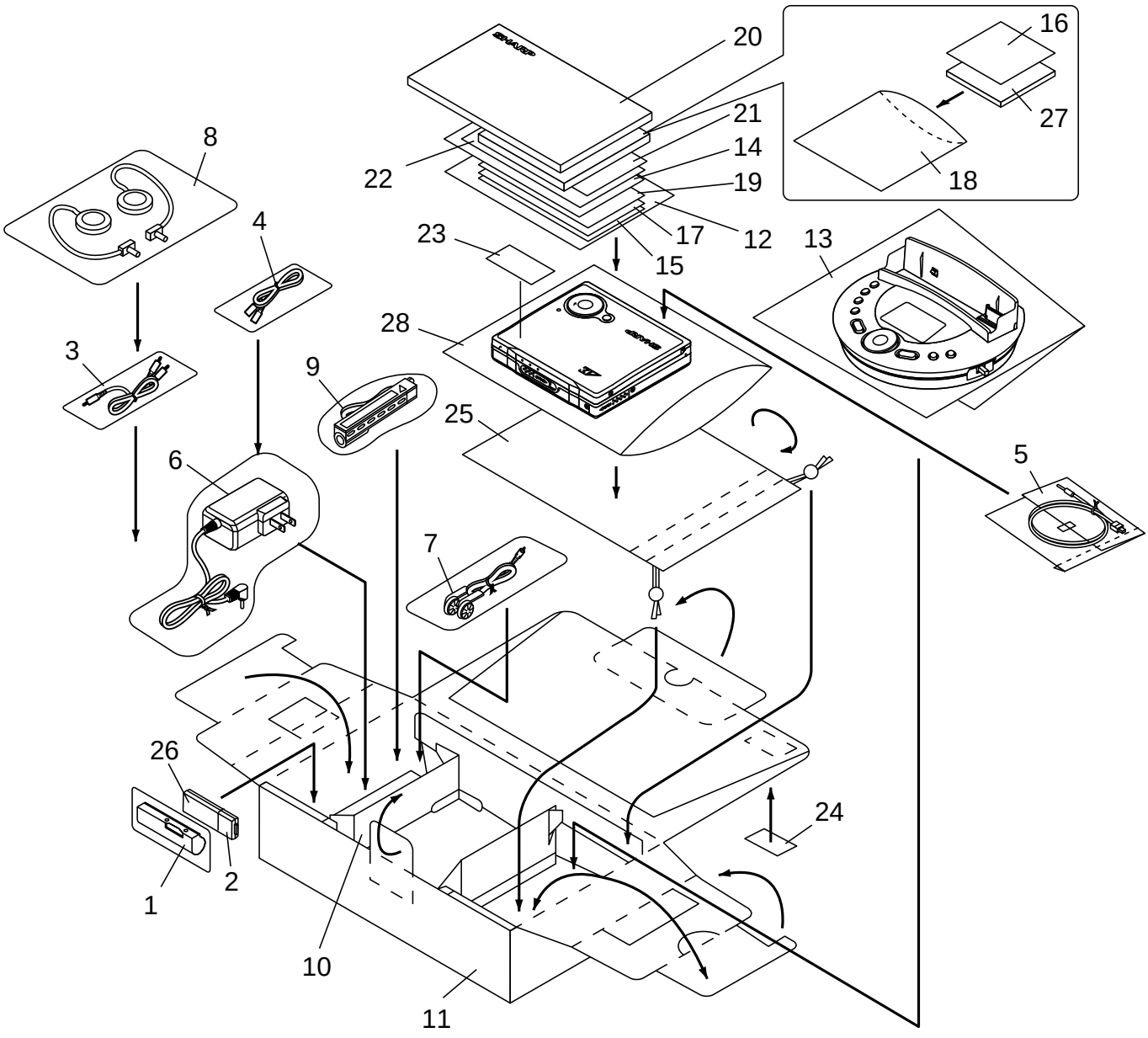


Figure 7 MULTI-LINK STATION EXPLODED VIEW

PACKING METHOD (FOR U.K. ONLY)

Setting position of switches and knobs		
Remote Control	HOLD	CANCEL

1. Battery Case	GCASZ0005AWSA	15. MG Caution	TCAUH0099AWZZ
2. Battery Carrying Case	PCōVW1015AWZZ	16. Install Caution	TCAUHA003AWZZ
3. Connecting Cord	QCNWG0029AWZZ	17. License Form	TCAUZ0177AWZZ
4. USB Cable	QCNWG0069AWZZ	18. Polyethylene Bag	SSAKAA002AWZZ
5. Optical Cable	QCNWG0422AFZZ	19. Warranty Card	TGANE0013AWZZ
6. AC Adaptor	RADPA8066AWZZ	20. Operation Manual	TiNSE0568AWZZ
7. Earphones	RPHōH0021AWZZ	21. Operation Manual (Net MD)	TiNSE0553AWZZ
8. Earphones	RPHōH0022AWZZ	22. Quick Guide	TiNSE0572AWZZ
9. Remote Control	RRMCW0030AWSA	23. Label, Feature (for Set) [(BK)]	TLABMA009AWZZ
10. Packing Add.	SPAKAA021AWZZ	23. Label, Feature (for Set) [(S)]	TLABM0193AWZZ
11. Packing Case [(BK)]	SPAKCA091AWZZ	24. Label, Feature (for Packing Case)	TLABZ1379AWZZ
11. Packing Case [(S)]	SPAKC1722AWZZ	25. Carrying Case	UBAGC0007AWSB
12. Spacer, Operation Manual	SPAKZ0490AWZZ	26. Rechargeable Battery	UBATM0009AWSA
13. Polyethylene Bag, Multi-Link Station	SSAKA0015AWZZ	27. CD-ROM	UDSKA0004AWZZ
14. Service Card	TCADS0005AWZZ	28. Polyethylene Bag	92LBAG1770A



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